DOCUMENT RESUME

ED 220 176 PS 012 802

AUTHOR	Wodarski, Lois Ann; And Others
TITLE	Teaching Nutrition by Teams-Games-Tournaments: An Application of Behavioral Analysis.
INSTITUTION	Maryland Univ., College Park. Agricultural Experiment Station.
REPORT NO	MP-941
PUB DATE	Oct 79
NOTE	320p.
EDRS PRICE	MF01/PC13 Plus Postage.
DESCRIPTORS	Behavioral Objectives; Elementary Education; *Elementary School Curriculum; *Learning Activities; *Nutrition Instruction; *Program Effectiveness; Secondary Education; *Secondary School Curriculum; Student Attitudes; Teacher Attitudes; Teaching Guides; *Teaching Methods
IDENTIFIERS	*Teams Games Tournaments Technique

ABSTRACT

Presented in the first part of this document are results from a pilot study designed to determine the effect of the Teams-Games-Tournaments (TGT) method on students' and teachers' nutrition knowledge. (The TGT is a structured sequence of learning activities combining small groups, instructional games, and tournaments to teach nutrition concepts.) Two curricula incorporating the TGT technique were developed and tested in two self-contained sixth grade classrooms and two high school home economics classes. In general, data obtained from questionnaires developed to assess students' and teachers' reactions to the TGT nutrition units indicated that the majority of students in all classes enjoyed the method. Students enjoyed working in groups and competing in tournaments, expressing the feeling that they learned "a lot" about nutrition and, importantly, the belief that what they learned would influence their future food choices. Teachers indicated that the units were well-planned, thorough, and easy to follow, noting that the children enjoyed working in groups and that the TGT activities not only increased the students' knowledge of nutrition, but also reinforced reading, math, spelling, and measurement skills. A detailed description of the contents and activities of the two curricula comprises the second and third sections, which are the major portion of the document. (MP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED220176

PS

MARYLAND AGRICULTURAL EXPERIMENT STATION

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or [illegible].

Teaching Nutrition by Teams-Games-Tournaments: An Application of Behavioral Analysis

Lois Ann Wodarski
Carol Lockshin Adelson
Mary Tidball Todd
John S. Wodarski

PS 012802

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
University of Maryland
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

MP 941
October 1979

UNIVERSITY OF MARYLAND COLLEGE PARK, MARYLAND

Teaching Nutrition by Teams-Games-Tournaments: An Application of Behavioral Analysis

Lois Ann Wodarski
Carol Lockshin Adelson
Mary Tidball Todd
John S. Wodarski*

*Assistant Professor, Graduate Assistant, Graduate Student,
Department of Food, Nutrition and Institution Administration
University of Maryland
Associate Professor, School of Social Work and Community Planning
University of Maryland, Baltimore

Contribution number 5623 and miscellaneous publication number 941 of the Maryland Agricultural Experiment Station, Department of Food and Nutrition.

The University of Maryland is an equal opportunity institution with respect to both education and employment. The university's policies, programs, and activities are in conformance with pertinent federal and state laws and regulations on nondiscrimination regarding race, color, religion, age, national origin, sex and handicap. Inquiries regarding compliance with Title VI of the Civil Rights Act of 1964, as amended; Title IX of the 1972 Education Amendments; Section 504 of the Rehabilitation Act of 1973; or related legal requirements should be directed to Dr. Robert S. Beale, Sr., Assistant to the Provost for Affirmative Action, Symons Hall, University of Maryland, College Park, MD 20742. Tel. 301/454-5981

Introduction

Behavioral analysis over the last 15 years has been applied to the solution of many classroom problems, including discipline and the teaching of verbal, reading and arithmetic skills. This is the first study in a pilot effort to teach nutrition to elementary and secondary students through behavioral analysis.

Studies to determine the nutrition knowledge and misconceptions of elementary and high school students have consistently shown a low level of knowledge among these populations (1,2,3,4,5,6). However, this poor performance does not seem to be the result of low emphasis on nutrition education. On the contrary, low nutrition knowledge scores have occurred in conjunction with a strong emphasis on nutrition instruction (7,8). Although systematic nutrition instruction has been included in schools for over 35 years, "poor nutritional status and eating habits of large numbers of people -- at all age levels and in all socioeconomic strata -- provide ample evidence that there are serious inadequacies in the total nutrition education effort to date" (9).

An individual's food habits are formed very early in life (10) and are not easily changed. Ideally, nutrition education and good eating habits should begin early in the home, long before the child reaches school age, and nutrition education and the child should grow together (11). The school influences the habits of young children, and can be a valuable tool for disseminating valid nutrition information (9,11,12). It is evident, however, that if the schools are to accomplish this task, curriculum materials which can be used on a continuing basis must be made available.

Researchers have found that teachers are most receptive to a nutrition unit when it is innovative, easily implemented, inexpensive and complements the existing school curriculum (13,14). A nutrition curriculum which meets these requirements, and which has the potential to develop into a long-range program which can be implemented from kindergarten through 12th grade, has been developed and tested on two self-contained elementary classrooms and two high school home economics classes. This curriculum incorporates the Teams-Games-Tournaments (TGT) technique, a structured sequence of learning activities combining small groups, instructional games and tournaments. TGT complements the existing learning structure, and is designed to create an effective classroom environment where all students are actively involved in the teaching-learning process and consistently receive positive reinforcement for successful performance (15). Competition and cooperation are combined in the classroom to promote peer group rewards for academic achievement. The social organization of the classroom is altered to create an interdependency among students and to make it possible for all students, despite different learning rates, to have an equal chance to succeed at an academic task (15).

This study was designed to determine the feasibility of teaching nutrition by TGT through assessing both student nutrition knowledge and how well teachers and students liked the technique. Two curricula were developed and tested for use with the TGT technique; one curriculum was designed for elementary school pupils, the other for high school students.

Method

Curriculum

Behavioral objectives of the nutrition unit were decided, and daily lesson plans, activities and learning experiences were developed (Figure 1). The 3-week unit for elementary children provides a basic introduction to nutrition, and was developed with the assumption that the student has never had a formal nutrition course. The daily lesson plans include general nutrition concepts, unit objectives, referenced subject matter, learning experiences and materials. Any teacher can use this unit regardless of his or her nutrition background.

The nutrition concepts center around basic nutrition principles; the content section capitalizes on the preteen's need for independence and responsibility, and focuses on how he or she can apply the nutrition concepts. The corresponding behavioral objectives emphasize skills which would enable students to make wise food selections. Based on the child's interest in participatory learning, the information is presented by inquiry, discussion and discovery learning experiences. Among the topics covered are foods and nutrients, sugar and tooth decay, label reading and refined vs. unrefined foods. The high school curriculum contains lesson objectives with appropriate background information, audio visual aids and bibliographic materials, and covers basic food and nutrition concepts, diet in relation to health and physical appearance, labeling and food preparation and service. These topics were chosen on the basis of previously reported food and nutrition needs and interests of high school students (1,6,16).

Teams-Games-Tournaments

The Teams-Games-Tournaments teaching technique, developed by researchers at the Johns Hopkins University Center for Social Organization of Schools, "capitalizes on the cooperative aspects of small groups, the motivational nature of instructional games, the competitive spirit of tournaments and students' familiarity with all of these" (17). TGT was developed through extensive research of games as teaching devices, small groups as classroom work units and the traditional task and reward structures (15,18).

In the traditional classroom, students work alone, have few active learning experiences and seldum interact. The traditional competitive reward system further disrupts interaction among students by forcing them to compete with one another for grades. This competition in turn develops an antiacademic classroom environment in which a student's academic achievement is discouraged and often scorned by peers. One advantage of this widely-used system is that it is easy to administer. Students, parents and school personnel understand the system, and the individual's reward depends upon his or her performance. However, at the same time, the low-performing student may be consistently denied the chance to get good grades regardless of his or her efforts (15,18).

In contrast, TGT incorporates a group task/cooperative reward structure which emphasizes group rather than individual rewards. This encourages peer tutoring because the team's success depends upon the individual performance of each team member. With TGT, all students have an equal opportunity to succeed, since each student competes against members of other teams who are at his or her own achievement level. All students are motivated to learn, and academic achievement is reinforced by peers since points earned by low achievers are just as valuable to the "team effort" as points earned by high achievers. In addition, students develop favorable attitudes toward classmates, increased interest in the subject matter, improved working relationships and increased academic achievement (15,18).

The three basic elements in this technique which promote motivation and interest in learning are teams, games and tournaments.

Teams. Students are divided into four-member, heterogeneous teams consisting of one high achiever, two average achievers and one low achiever. The average achievement level of each team should be approximately equal. The team remains intact throughout the period when TGT is used. The day before a tournament, team members hold a team practice session to study together or to fill out worksheets reviewing the material covered that week. Peer tutoring is encouraged (17,18).

Games. Students compete against members of other teams on instructional games which are either commercially produced or made by the teacher. The games usually consist of short-answer questions designed to assess and reinforce the material taught in class.

Tournaments. Students play the games in tournaments held at least once a week. Each student is assigned to a tournament table where he or she competes individually against two other students, each representing a different team. The students at each table are of comparable achievement levels. Points are earned for each game question answered correctly and, at the end of the tournament, the top, middle and low scorer get a fixed number of points. Each player receives some points for participating in the tournament. The points a student earns are used to determine whether he or she will be "bumped" to the next higher table (with high performing students), "bumped" to the next lower table or stay at the same table for the next tournament. This bumping procedure encourages students who have increased their achievement levels to keep working. The points are added to those earned by other members of the student's team to compute a team score. The individual and team scores are ranked and publicized in a tournament newsletter which the teacher distributes to the class (15,17,18).

There are two weekly schedules which can be used with TGT. One schedule involves teaching the information the first 3 days of the week, and holding a team practice session on the fourth day and a tournament on the fifth day. A more intensive use of TGT would involve two tournaments and two practice sessions each week (18).

Experimental Design and Procedures

This research was a pilot experimental effort to determine the effectiveness of TGT on elementary and high school students' nutrition knowledge. The dependent variables were the nutrition knowledge of the study participants, and the responses of students and teachers to the TGT technique. The independent variables were the 3-week elementary curriculum and the 4-week high school curriculum, both taught by the TGT technique.

Subjects

Classrooms were selected for participation in the study based on the interest and willingness of school administrators and teachers. Two elementary school teachers in Montgomery county, Maryland, and one high school home economics teacher in Anne Arundel county, Maryland, agreed to teach the TGT nutrition units. The two elementary teachers had 25 and 22 students in self-contained sixth grade classrooms, and both previously had taught other subjects by the TGT technique. Neither teacher had taught a nutrition unit before and none of the students had studied nutrition in school. Students in one elementary school class had been exposed to the TGT technique; students in the other class had not.

The high school teacher had a total of 36 students in the 10th through 12th grades enrolled in two home economics courses, none of whom had been exposed to the TGT technique or to a nutrition education course. The teacher had taught foods and nutrition courses previously, but had no prior experience with TGT.

All classes were racially mixed and students generally were of the middle socioeconomic stratum.

Constructing Nutrition Knowledge Tests and Student and Teacher Questionnaires

The pre- and posttests for the elementary students were comprised of 60 true-false questions based on the nutrition lessons; another 60 questions were composed for the high school students. Random selection determined whether each question would appear on the pre- or the posttest. Questions were tested for content validity by a panel of food and nutrition professors at the University of Maryland who were asked to respond to each question based on current knowledge in their field. Ambiguous or easily misinterpreted statements were reworded or discarded. Questions were also read by several students of the appropriate age levels to rule out further problems with ambiguity or semantics.

For each set of the final 60 questions, 20 freshman students enrolled in the third week of an introductory nutrition course at the University of Maryland were randomly selected to respond. Responses were separated according to whether the item appeared on the pre-or the posttest. There were no significant differences in the mean scores of the pre- and posttests on either set of the parallel forms; therefore, the questions were assumed to be equally difficult and the forms equivalent.

Questionnaires were developed to assess student and teacher reaction to the nutrition units. The questionnaires for elementary students and for high school students included questions about the TGT technique itself and the nutrition topics covered. Students were instructed to reply by checking or circling the appropriate response. The teacher questionnaire assessed the teachers' reactions to the TGT technique and the curriculum, and solicited suggestions for improvements through open-ended questions. A section for evaluating each learning activity on the basis of enjoyment of presentation, appropriateness for age level and effectiveness was also included.

Implementing the Curricula

Before beginning, the investigators met with the teachers to present the curriculum and the TGT teacher's guide[1] to explain the objectives of the study, to arrange the time schedule for conducting the unit and to answer any questions on TGT or the curriculum.

The investigators explained the purpose of the study to participating students. The teachers administered the pretests immediately before implementing the units. Pretest scores served as the basis for dividing the classes into high, medium and low nutrition achievers in order to structure the TGT teams.

The TGT nutrition units were taught by the classroom teachers for 3 weeks, for 45 minutes each day in the sixth grade classes, and for 50 minutes each day in the high school classes.

The first 3 days of the week were devoted to learning the food and nutrition concepts through demonstrations, discussions and various participatory activities; the fourth day was devoted to working in TGT teams on the worksheets to prepare for the tournament, which was held on the fifth day. Teachers tabulated individual and group scores following the tournament and posted the scores on the next school day, generally on Monday mornings.

The teachers' implementation of the technique was periodically observed by the researchers. Although the investigators made themselves available for answering questions about the TGT technique and the curriculum, they were seldom called upon by the teachers who felt the units were largely self-explanatory.

---

[1] Available from Argus Communications. See p. 13 for address

Immediately after completing the 3- and 4-week units, students and teachers were given posttests and questionnaires. Responses to the pre- and posttest questions were measured for internal consistency according to the Kuder-Richardson and Hoyt reliability of measurement method (19). A t-test for related measures (19) was used to assess gains in nutrition knowledge from pre- to posttest. Frequencies of responses to student and teacher questionnaires were tabulated.

Results and Discussion

As shown in Table 1, significant increases in nutrition knowledge were found for both the sixth grade classes ($P < .001$) and the high school classes ($P < .05$ and $P < .001$).

Table 1. Pretest and posttest nutrition knowledge scores according to class[a]

Class	No. of Students	Pretest Mean	Posttest Mean	Level of Signif.
Elementary				
A[b]	25	16.12 ± 3.11[c]	23.32 ± 3.69	$p < .001$
B	22	16.50 ± 3.06	22.86 ± 3.32	$p < .001$
Secondary				
C	12	19.42 ± 5.18	24.17 ± 3.78	$p < .05$
D	24	20.73 ± 4.26	25.33 ± 2.53	$p < .001$

a Based on a 30-item test.
b These students had used TGT prior to the study.
c Mean ± standard deviation.

Student responses to the questionnaires indicated that an overwhelming majority of students in all classes enjoyed the TGT nutrition units. The students enjoyed working in groups and competing in tournaments, they felt they learned "a lot" about nutrition and, most importantly, they believed that what they learned would influence their future food choices (Tables 2 and 3).

Table 2. Responses of elementary students to selected questions on the elementary student questionnaire.

	Percentage Responding "Yes"	
	Class 1 n=27[a]	Class 2 n=24[a]
Did you enjoy learning nutrition by TGT?	93	96
Did you prefer learning nutrition by working in groups rather than alone?	78	79
Did the daily skilldrills help you learn the material you talked about in class?	96	96
Did the team practice sessions help prepare you for the tournament?	88	100
Did you enjoy the tournaments?	88	91
How much do you think you've learned about nutrition from the nutrition unit:		
A lot	71	87
Some	29	13
Little or none	0	0
Do you believe what you have learned will affect your choice of foods?	83	91
Do you feel that you now know how to make wise food choices?	92	100

[a] Differs from number in the pre- and posttest data, because all students who answered questionnaires are included.

Table 3. Combined responses of two classes of high school students to selected questions on the high school student questionnaire[a]

---

1. Did you prefer to work in groups 28 or alone 9 ?
2. Did you enjoy your 4-week nutrition education classes taught by TGT? Yes 28 No 9
3. Did the teacher present the material as if she were interested in nutrition? Yes 36 No 1
4. Do you believe what you have learned in the past 4 weeks will affect your choice of foods? Yes 22 No 3 Don't know 12
5. Did you like playing the tournaments? Yes 22 No 14
   Didn't answer 1
6. Before beginning this course, did you think you would like 14 or dislike 22 learning about nutrition? (Didn't answer 1)
7. What is the main reason you liked this unit?
   I liked learning about nutrition. 9
   I like learning by TGT. 8
   I like learning nutrition by TGT. 13
   Didn't answer. 7

---

[a] n = 37 (Responses of one student who did not participate in the entire study are included.)

Comments from teachers' questionnaires indicate that they believed the units to be "well-planned, thorough and easy-to-follow" and they found the children enjoyed working in groups. The teachers perceived the major benefits to be the peer tutoring, the enthusiasm and interest the unit promoted and the opportunity for the children to compete on their own achievement levels. They commented that the activities not only increased the students' knowledge of nutrition, but also reinforced reading, math, spelling and measurement skills.

Any apprehensions about students not applying themselves since they would not be graded for quizzes and activities were soon dispelled. One teacher commented that several students asked to take team worksheets home to practice for the tournaments. She also noted that working for team points was as important to a number of the students as working for a grade.

When asked to evaluate how different achievement level students benefited from a group effort which fostered peer tutoring, both a sixth grade teacher and the high school teacher commented that they felt the lower and middle achievers benefited the most by being able to compete on their own level, and by successfully winning points for their team. The high achievers, accustomed to high grades, expressed some disappointment and frustration when they received a low score on a tournament game and won only two points to take back to their teams. These results are in line with findings of Wodarski (20) who worked with children of similar ages in mathematics, reading and vocabulary development. The use of group incentive structures was found to increase academic gains over traditional classroom structures, but low and middle achievers benefited more than high achievers. In these same studies, the high achievers initially expressed dissatisfaction with the group reinforcement system. However, these negative feelings disappeared after the first 2 weeks of the study.

Overall, the results of this study reinforce what has been found in 10 experimental field studies conducted by the developers of TGT to determine the effects of the technique on students contrasted with the traditional reward and task classroom structures, and the effects of the various TGT structural components on students (15). The TGT technique produces greater academic achievement, improves student attitudes toward the subject matter, increases peer tutoring, provides a peer normative climate which reinforces academic achievement and increases the value and perceived probability of success in the classroom.

Problems encountered in implementing the TGT nutrition unit were few but nevertheless deserve mention. Assigning students to teams based on a single pretest score can be misleading. In other subject matter areas this problem is lessened by additional measurements of academic achievement, such as standardized test scores for math and language arts. In foods and nutrition, however, no single standardized test is available for measuring all the various skills often incorporated into nutrition curricula, and teachers must assess present nutrition knowledge levels according to self-developed tests.

Students dropping and adding courses often disrupt group structure, and adjustment and acceptance of group members is a well-known aspect of small-group interaction (22). Group interaction decreases until the new member is accepted and all members have adjusted. Scoring and team composition adjustments for adding or dropping students is explained in the TGT teacher's guide (17).

Finally, tournament questions need to be challenging enough for the high achievers, yet easy enough for the underachievers to read and understand. This problem is eliminated if the teacher has time to develop different games for students of different achievement levels.

Recognizing the importance of peer groups in setting standards of behavior and attitudes toward various situations, the researchers were concerned that the lagging enthusiasm or indifference of a few class members would influence the entire group. As in any student group, initial enthusiasm varied from very high to outright obstinance; however, by the end of both units, both verbal and written comments were positive. In addition, some students expressed a desire for such things as "Best Team" and "Most Valuable Player" awards, and applauded tournament winners.

Summary and Implications

The importance of finding a technique for teaching nutrition that is both innovative and effective at the elementary and high school levels is apparent when the results of past studies on this subject are studied. Knowledge and student attitudes toward nutrition are consistently poor among young students, and many methods of teaching nutrition have left students bored and unresponsive.

After recognizing this shortcoming in nutrition education, the TGT nutrition curricula were developed for elementary and secondary schools. This development was based on the demonstrated significant results of TGT for increasing academic skills in a variety of subject matter areas, as well as the expressed personal liking of teachers for the technique.

This study shows that it is possible to successfully teach nutrition to elementary and high school students by the TGT technique. Pupils' nutrition knowledge increased significantly as a result of the TGT nutrition unit, and both students and teachers enjoyed using the curriculum. Students indicated that they enjoyed the TGT technique for learning nutrition, and that they liked working in groups and participatory-type learning experiences. Teachers felt that the major benefits of the TGT nutrition units included not only the nutrition information they contained but also the peer tutoring they generated, the interest in nutrition they promoted and the opportunity they provided for students to compete on their own achievement levels. As an added bonus, they indicated that the activities reinforced the reading, math, spelling and measurement skills of the students. All teachers expressed their intentions to use the TGT nutrition units again next year.

Further research into the use of Teams-Games-Tournaments in nutrition might include testing the effectiveness of longer units to determine whether or not students become bored if they are exposed to TGT for an extended time. Changes in food behavior, the ultimate goal of nutrition education efforts, must be observed in relevant contexts such as school lunchrooms. Even though 91 percent and 83 percent of the students in the two sixth grade classes, and 60 percent of the combined high school classes believe that the nutrition units will affect their choice of foods in the future, changes in behavior must be directly observed. Furthermore, follow-up data should provide information on how nutrition knowledge is retained, and if dietary change is permanent. Finally, curricula incorporating the TGT technique should be developed and tested for use with children of different ethnic and socioeconomic backgrounds.

TGT's carefully structured sequence of teaching-learning activities makes it possible for teachers with no prior experience in the method to implement it. In this case, providing teachers with an appropriate curriculum, the TGT teacher's guide and minimal additional instruction made it possible for two teachers without formal training in food and nutrition to implement a successful nutrition unit. Moreover, the unit was innovative, inexpensive, required little teacher preparation, complemented the existing school curriculum and proved challenging to students and interesting to teachers and students alike.

References

1. Dwyer, J. T., Feldman, J. J., and Mayer, J. "Nutritional Literacy of High School Students". *Journal of Nutrition Education* 2: 59, 1970.

2. Harrison, P. E. and Irwin, L. W. "Certain Harmful Health Misconceptions of Junior High School Students Attending Public Schools in Metropolitan Areas". *The Research Quarterly* 35 (4): 491, 1964.

3. Sliepcevich, E. M. *School Health Education Study: Summary Report of a Nationwide Study of Health Instruction in the Public Schools*. School Health Education Study, Washington, D.C., 1964.

4. Sutton, W. C. "Misconceptions About Health Among Children and Youth". *Journal of School Health* 32: 347.

5. Wong, V. "Food Information of Homemakers and 4-H Youths". *Journal of the American Dietetic Association* 58: 215, 1971.

6. Wodarski, L. A. *Food and Nutrition Misconceptions, Knowledge, Related Interests, and Information Sources of Knoxville, Tennessee, High School Students*. Doctoral dissertation, University of Tennessee, 1976.

7. Dowell, L. J. 1966. "A Study of Selected Health Education Implications". *Research Quarterly*. 37: (1): 23, 1966.

8. Kirk, R. H., Hamrick, M. and McAfee, D. C. "Nutrition in Health Instruction: The Tennessee Health Education Project". *Journal of Nutrition Education* 7 (2): 68, 1975.

9. The White House Conference on Food, Nutrition, and Health."Recommendations of Panels on Nutrition Teaching and Education". *Journal of Nutrition Education* 1: 24, 1970.

10. Gifft, H. H., Washbon, M. B., and Harrison, G. G. *Nutrition, Behavior, and Change*, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.

11. Smey, J. "Nutrition Education in Elementary School". *Journal of Home Economics* 50: 335, 1958.

12. Whitehead, F. E. "Nutrition Education for Children in the U.S. Since 1900-Part I". *Journal of the American Dietetic Association* 33: 880-884, 1957.

13. Peterson, M. E. and Kies, C. "Knowledge and Attitudes of Early Elementary Teachers". *Journal of Nutrition Education* 4: 11, 1972.

14. Chethik, B. B. "Volunteers Teach Nutrition to Teachers and Students". Journal of Nutrition Education 6: 133, 1974.

15. DeVries, D. L., and Slavin, R. E. Teams-Games-Tournaments: A Final Report on the Research. Center for Social Organization of Schools, The Johns Hopkins University, 1976, Report #217.

16. Lantagne, J. E. "Health Interests of 10,000 Secondary School Students". The Research Quarterly 23: 330, 1952.

17. Teams-Games-Tournaments: The Team Learning Process. Teacher Guide. Niles, Illinois: Argus Communications, 1976.

18. Fennessey, G., DeVries, D. L., and Edwards, K. J. Using Teams-Games-Tournaments (TGT) in the Classrooms. Second Edition. Center for Social Organization of Schools, The Johns Hopkins University, 1974.

19. Bruning, J. L. and B. L. Kintz. Computational Handbook of Statistics, Glenview, Illinois: Scott, Foresman, and Co., 1968.

20. Wodarski, J. S., R. L. Hamblin, D. R. Buckholdt, and D. E. Ferritor. "The Effects of Low Performance Group and Individual Contingencies on Cooperative Behaviors Exhibited by Fifth Graders". The Psychological Record. 22: 359, 1972.

21. Buckholdt, D., and J. S. Wodarski. "The Effects of Different Reinforcement Systems on Cooperative Behavior Exhibited by Children in Classroom Contexts". Journal of Research and Development in Education, in press.

22. Rosenfeld, L. B. Human Interaction in the Small Group Setting, Columbus, Ohio: Charles E. Merrill Publishing Co., 1973.

TGT NUTRITION UNIT--DAY 1
WEEK C

WHY SOME SNACKS ARE BETTER THAN OTHERS

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
THERE ARE MANY REASONS WHY WE CHOOSE THE FOODS THAT WE DO	To list and rank factors that affect food choices	Now that you know what nutrients your body needs and how to get them, let's talk about HOW you CHOOSE what you eat!		
		"Why Do You Eat the Foods That You Do" Skilldrill C-a.	"Why Do You Eat the Foods That You Do" Skilldrill C-a should be passed out to each student and completed individually.	Idea adapted from the National Dairy Council "Food, Your Choice Activity" Pencils "Why Do You Eat the Foods That You Do" Skilldrill C-a
		Discuss answers.	Discuss the answers with the whole class.	
		Many of you probably eat what the rest of the family does for dinner, but when are the times during the day when you alone choose what you'll eat?		
CHILDREN DO HAVE SOME CONTROL OVER WHAT FOODS THEY CONSUME	To state times of the day when he/she chooses what foods to eat	How many of you make your own breakfast or request what you would like? How many choose what they'll eat for lunch here? How many choose their own snacks?		
SNACKS ARE AN IMPORTANT SOURCE OF NUTRIENTS, ESPECIALLY DURING THE GROWTH YEARS	To explain the importance of choosing nutritious snacks which will contribute to the daily nutrient needs of the body	Snacks are a very important source of nutrients which our body needs. Choosing nutritious snacks can supply the body with these nutrients.	Point Out Poster--"Your Snacks: Chance or Choice?"	Poster--"Your Snacks: Chance or Choice?" National Dairy Council

FIGURE 1

This curriculum is suggested for
fourth through sixth grade students.

20

A Note to the Teacher:

Never before has the need for nutrition education in the schools been so great. Changes in America's lifestyles, proliferation of processed foods and advertising's powerful influence over food choices all require a good knowledge of foods and the nutrients they provide. In addition, the relationship between a nutritious diet and health and longevity is becoming increasingly apparent. Since it is easier to develop good eating habits than to change poor ones, nutrition education must be started early and continue throughout life. What better place to begin such a comprehensive program than in the schools where we can reach such a massive audience? Therefore, it is you, the teacher, who can be most instrumental in shaping the nutritional practices and ultimate health of this and future generations. Hopefully, this unit will help you to do so.

The format of this curriculum is as follows: The 3-week TGT nutrition unit should be used for about 45-60 minutes each day. The first 3 days of each week, the children learn the nutrition information by discovery, discussion and inquiry techniques. After each lesson, a daily activity or "skilldrill" should be completed in the TGT teams to reinforce the concepts learned that day. The skilldrills incorporate spelling, reading and math, thus making use of skills which the child is learning in other subjects, too. The fourth day of every week is the team practice session. Peer tutoring should be encouraged during this time, because the teams are completing worksheets which will prepare them for the next day's tournament. Half of the questions in the game, which is used for the tournament the last day of every week, consist of questions on the worksheets completed the day before. The other half of the questions are also based on the week's behavioral objectives. Individual and team scores should be tallied and posted after the tournament, and new tournament tables should be arranged according to the "bumping" procedure.

IMPORTANT

Before you start the unit:

1. Look at the "Materials and Resources" section of the curriculum and order the materials you will need for the 3 weeks. The addresses of the resource centers you can contact are listed on page 179.

2. Make plans to administer the enclosed pretest before beginning the TGT unit; the posttest should be administered as soon after completing the unit as possible.

3. When the curriculum calls for cooking ingredients or for food labels, ask the children to each bring some to school--this will give them responsibility and defray the cost of the food.

4. Three learning activities require advance preparation:

   a. Week B--discusses the rat-feeding experiment, but the feeding experiment must start at least 2 weeks earlier for one rat to show signs of being malnourished (if you are going to do it). Also remember that provisions must be made for the rats on the weekends (students enjoy taking them home, though). The rat demonstration booklet from the National Dairy Council explains how to take care of the rats, and you may want to use one of the experimental diets in the booklet to prove the importance of a well-balanced diet. Students also enjoy an experiment in which one rat gets foods from all four food groups (peanuts, sunflower seeds, spinach, cheese, carrot, orange, whole wheat bread) and the other rat gets foods mostly from the "other" group which contain few nutrients (nonenriched doughnuts, coke, sweet chocolate, nonenriched bread, peanuts and lettuce). Although this demonstration is a little time-consuming, the experiment is quite worthwhile.

   b. Week B, Day 2--discusses the effect of soaking a chicken bone in vinegar. The bone should be soaked for 1 week prior to the discussion.

   c. Week C, Day 1--requires that an eggshell be placed in Coke about 3 days before this discussion.

5. If you have never used TGT before, read the TGT teacher guide thoroughly so that you can explain the technique to the class. Divide the class into TGT teams before you begin the unit.

6. You should be able to duplicate the xeroxed skilldrills, worksheets and games on a combomatic ditto machine. (Use a thermofax machine to transfer the activities in the curriculum onto ditto masters.) Transparencies can be made from the appropriately marked curriculum pages on an infrared transparency maker (thermofax machine).

7. Please note that we have included an extra unit on "Breakfast," (pages 175-178) which you may wish to incorporate into your unit if time permits.

PRETEST FOR SIXTH GRADERS

On the line in front of each statement, write a "T" if you think that the statement is TRUE and an "F" if you think that the statement is FALSE. If you do not know the answer, put an "X" in the space.

_____ 1. The Basic 4 refers to the four nutrients that are needed by the body.

_____ 2. Candy, coke and cookies are not found in ANY of the Basic 4 food groups because they usually supply few nutrients other than carbohydrate.

_____ 3. Four servings from the bread and cereal group, three servings from the milk group, four servings from the fruit and vegetable group and two servings from the meat group should be eaten by an 11-year-old each day.

_____ 4. Joe eats a plain hamburger on a bun, a glass of milk and a slice of cheese. He had a food from each of the four food groups.

_____ 5. The food you eat does not affect your health.

_____ 6. Rice and noodles are in the same food group as bread and cereal.

_____ 7. A growing 11-year-old needs a smaller amount of each nutrient than a full-grown adult.

_____ 8. Pumpkin seeds and nuts are a more nutritious snack than marshmallows and jello.

_____ 9. Good sources of iron are found mainly in the meat group and the bread and cereal group.

_____ 10. Fresh fruit and cheese are more nutritious snacks than soda pop and cookies.

_____ 11. Food commercials often use gimmicks such as promising popularity if you eat their product.

_____ 12. The three nutrients which supply the body with energy are protein, carbohydrate and fat.

_____ 13. Raisins, celery and apples are all called "detersive" foods because they help clean the teeth.

_____ 14. Foods which stick to the teeth and contain a large amount of sugar may promote dental cavities.

_____ 15. Foods from the "other" food group such as candy and cake should be chosen only to supply additional energy (calories) to the diet since they supply few nutrients.

_____ 16. Snacks cannot be an important source of nutrients.

_____ 17. Dark, leafy green vegetables and deep yellow fruits and vegetables are the best sources of vitamin C.

_____ 18. One ounce of cheese supplies about the same nutrients as 1 cup of milk.

_____ 19. Sugar is added by the manufacturer to products such as coke, candy and fruit-flavored drinks.

_____ 20. In general, 1/2 cup of vegetables equals one serving of the fruit and vegetable group.

_____ 21. Whole grain products have more nutrients and are less processed than enriched products.

_____ 22. Calcium is supplied mainly by foods in the bread and cereal group.

_____ 23. All of the nutrients your body needs cannot be found in the foods you eat.

_____ 24. You must eat one food from each of the Basic 4 food groups at every meal to have a balanced diet.

_____ 25. Tomatoes, oranges, grapefruit juice and spinach are in the same food group.

_____ 26. A person who is well-nourished will generally have better health than one who is poorly nourished.

_____ 27. If a product has sugar as its first ingredient, there is more sugar in that food than any other ingredient.

_____ 28. Eating according to the Basic 4 food group requirements will not ensure that you will get the minimum amount of nutrients that you need every day.

_____ 29. We must buy cereals which are "fortified" since we should get all our vitamins and minerals from cereal.

_____ 30. In general, one serving from each of the four food groups would be:

1 cup of milk from the milk group
2-3 ounces of meat from the meat group
1/2 cup of fruit or vegetable from the fruit and vegetable group
AND
1 slice of bread or 1/2 cup of pasta from the bread and cereal group.

ANSWERS TO PRETEST

1. F
2. T
3. T
4. F
5. F
6. T
7. F
8. T
9. T
10. T
11. T
1[illegible] T
13. F
14. T
15. T
16. F
17. F
18. T
19. T
20. T
21. T
22. F
23. F
24. F
25. T
26. T
27. T
28. F
29. F
30. T

POSTTEST FOR SIXTH GRADERS

On the line in front of each statement, write a "T" if you think that the statement is TRUE and and "F" if you think that the statement is FALSE. If you are not sure of the correct answer, put an "X" on the line.

_____ 1. Jane will still meet the Basic 4 requirements if she eats an extra serving from the meat group and omits one serving from the milk group.

_____ 2. Examples of foods in the bread and cereal group are noodles, cake, cookies and bread.

_____ 3. Two eggs are one serving of the meat group because they provide about as much protein and iron as 2-3 ounces of meat.

_____ 4. Adults and children need the same nutrients, but differ in the amount of each nutrient they require.

_____ 5. Your body needs a greater amount of each nutrient when you are growing than it does once you are full grown.

_____ 6. Examples of foods in the milk group include yogurt, cheese, cottage cheese and buttermilk.

_____ 7. Girls do not need all of the nutrients that boys do.

_____ 8. Reading a label will usually tell you whether sugar or artificial colors and artificial flavors have been added.

_____ 9. Foods within one food group can be eaten instead of another food in that group since they both supply about the same nutrients.

_____ 10. To help protect teeth against dental cavities, peanut butter on bread would be a better snack than jelly on bread.

_____ 11. Examples of foods in the fruit and vegetable group are strawberries, mustard greens, turnips and butter.

_____ 12. Mothers and fathers do not need vitamin C.

_____ 13. Dry peas and dry beans are part of the meat group because they are good sources of protein and iron.

_____ 14. Vitamin A can be stored in the body, and therefore a vitamin A source does not have to be eaten every day.

_____ 15. Milk is one food which will supply all the nutrients your body requires.

_____ 16. Television commercials may often get you to buy food by saying how tasty the food is or by promising that there is a toy inside the package.

_____ 17. Enriched flour has more total nutrients than whole wheat flour or nonenriched flour.

_____ 18. White rice has more nutrients than brown rice.

_____ 19. Enrich and fortify both mean that nutrients which were lost in processing have been added back to the product.

_____ 20. Eight ounces of yogurt supplies about as much calcium as 1 cup of milk.

_____ 21. Sugary foods which stick to the teeth allow more acid to be produced by bacteria in the mouth.

_____ 22. Foods are divided into food groups, called the Basic 4, based on the nutrients which the foods contain.

_____ 23. It is the variety of nutrients in food rather than the food itself which our bodies need.

_____ 24. Foods within one food group usually supply the same nutrients.

_____ 25. Beverages such as orange juice and soda pop are in the milk group.

_____ 26. Various foods supply different nutrients; therefore, eating a variety of foods will help you get the nutrients you need.

_____ 27. Nutrients have specific functions in the body, yet they all must be present to work properly.

_____ 28. When rats are fed a diet which lacks several nutrients, they do not grow well or look healthy.

_____ 29. Artificial colors and flavors which are added to food by the manufacturer add no nutritional value to the product and are usually added to make the food look or taste different.

_____ 30. An orange contains more sugar than gelatin (jello) contains.

ANSWERS TO POSTTEST

1. F
2. F
3. T
4. T
5. T
6. T
7. F
8. T
9. T
10. T
11. F
12. F
13. T
14. T
15. F
16. T
17. F
18. F
19. F
20. T
21. T
22. T
23. T
24. T
25. F
26. T
27. T
28. T
29. T
30. F

GAME SCORE SHEET

DATE ____________________ CLASS ______________________________

TOURNAMENT TABLE NUMBER ___________ TOURNAMENT NUMBER _________________

PLAYERS		SCORES		
Names	Team	Day's Points	Tournament Pts.	Next Table
1.				
2.				
3.				
4.				
5.				

Absent Students:

1.

2.

TEAM SUMMARY SHEET

TEAM NAME _______________________

Team Members	Tournament Points				
	Date				FINAL POINTS
1.					
2.					
3.					
4.					
5.					
6.					
TOTALS					

Pts. rec'd this tournament	Total rec'd to date

STUDENT QUESTIONNAIRE

1. Age: ____________

2. Male OR Female? ____________

3. Did you enjoy learning nutrition by TGT? Yes____ No____

4. Do you prefer learning nutrition by:

   Working together in groups ________

   OR

   Working alone ____________

5. Did the worksheets help you learn the material you talked about in class?
   Yes ____ No ____

6. Did the team practice sessions help prepare you for the tournament?
   Yes ____ No ____

7. Did you enjoy the tournaments? Yes ____ No ____

8. Before beginning this course in nutrition, did you think you would:

   Like learning about nutrition ________

   OR

   Dislike learning about nutrition ________

9. Circle the topics listed below that you would like to have learned about in this TGT nutrition unit:

   Gaining and losing weight

   Vegetarian diets

   Diet and heart disease

   Diet and diabetes

   Diet and cancer

   Fad diets

   Exercise and food needs

   Truthfulness of what you read and hear about nutrition

   Other topics you'd like to learn about: ________________________

   ____

   ____

10. Circle the topics (listed below) that you would rather not have talked about in the nutrition unit:

Food the body needs

Functions of nutrients in the body

Food sources of nutrients

Processed and less processed foods

Label reading

Nutrition and dental health

Food advertising

Choosing snacks wisely

Mice experiment

Meal planning

Other topics you did not like talking about in nutrition ______________

____

11. For each nutrition activity, check how you felt about it under the appropriate column (look at worksheets in your notebook):

ACTIVITY	Like Very Much	Like	O.K.	Dislike	Dislike Very Much
Put food models into Basic 4 groups	____	____	____	____	____
Cut and weigh foods for serving size	____	____	____	____	____
Word Find Skilldrill on foods and their food groups	____	____	____	____	____
Crossword puzzle on serving sizes	____	____	____	____	____
Team practice sessions	____	____	____	____	____
Tournaments	____	____	____	____	____
Put comparison cards in food groups to find nutrients in the food groups	____	____	____	____	____
Word Scramble Skilldrill	____	____	____	____	____
Look up nutrient functions in books	____	____	____	____	____
Decoder Skilldrill on nutrients in foods	____	____	____	____	____

ACTIVITY	Like Very Much	Like	O.K.	Dislike	Dislike Very Much
"Mulligan Stew" movie (kids in band)	____	____	____	____	____
Movie about tooth decay	____	____	____	____	____
Movie about sugary food ads (cereal)	____	____	____	____	____
Tasting foods to see which stick to teeth	____	____	____	____	____
Why Do You Eat the Foods That You Do Skilldrill	____	____	____	____	____
Choosing Better Snacks Skilldrill	____	____	____	____	____
Looking at food labels (labels in bags)	____	____	____	____	____
Label Hunt Skilldrill	____	____	____	____	____
Learning about processing of foods (wheat activity, enrichment)	____	____	____	____	____
Processed vs Less Processed Skilldrill	____	____	____	____	____
Eating raw vegetables, seeds and nuts	____	____	____	____	____
Mice experiment	____	____	____	____	____

12. What do you believe is the most important thing that you learned from this nutrition course? ____

____

13. If you liked this nutrition unit, what is the MAIN reason you liked it: (check ONLY one)
I like learning about nutrition _________________
I like learning by TGT _____________________________
I like learning nutrition by TGT _______________

14. How much do you think you have learned in the past weeks about nutrition:
None ____________
A little ________
Some ____________
A lot ___________

15. Do you believe that what you have learned these past weeks will affect your choice of foods to eat? Yes ____ No ____

16. Do you feel that you now know how to make wise food choices?
Yes ____ No ____

TEACHER QUESTIONNAIRE

Position Title: ____

How many students in your class? ______________________________

1. What were your principal reactions to the nutrition unit?

2. What were your principal reactions to TGT as a teaching method?

3. In general, how did the participants react to TGT?

4. Did participants of different achievement levels respond differently to TGT? (If yes, please describe these differences.)

5. Did some students seem to benefit more than others from TGT? (If yes, please describe these students and indicate how they seemed to benefit more than others from TGT.)

6. Did you have any problems when you introduced and used TGT? (If yes, please describe these problems.)

7. Please comment upon how the nutrition curriculum fit into the TGT format. Were there problems with the team practice worksheets, tournament games, etc.?

8. In what ways would you like to see the nutrition curriculum modified? Suggestions will be greatly appreciated!

9. Please evaluate and comment on the activities contained in the nutrition unit:

ACTIVITY (Lesson)	Did you enjoy presenting it?	Was it O.K. for your grade level?	Was it an effective learning experience?	COMMENTS AND/OR SUGGESTIONS
Put food models into four food groups				
Weigh food for serving sizes				
Make pizza and bread				
Word Find Skilldrill--Basic 4				
Crossword puzzle on serving size				
Put comparison cards in food groups to find nutrients in the food groups				
Look up nutrient functions in books				
Decoder Skilldrill on nutrients in foods				
"Mulligan Stew" movie (kids in band)				

ACTIVITY (Lesson)	Did you enjoy presenting it?	Was it O.K. for your grade level?	Was it an effective learning experience?	COMMENTS AND/OR SUGGESTIONS
Movie about tooth decay				
Movie on sugary food ads				
Tasting foods to see which stick to teeth				
Ranking reasons why we eat the foods that we do				
Choosing Better Snacks Skilldrill				
Looking at food labels (labels in bags)				
Label Hunt Skilldrill				
Learning about processing of foods (wheat activity and enrichment, etc.)				
Processed vs Less Processed Foods Skilldrill				
Eating raw vegetables, seeds and nuts as snacks				
Mice experiment				
Other:				

10. Was the curriculum guide sufficiently clear and complete?

11. What other subjects were taught or reinforced by the nutrition skilldrills, team practice worksheets, tournament games, recipes, etc.?

12. Do you plan to continue to use this curriculum to teach nutrition? Why or why not?

13. Do you plan to continue to use TGT for nutrition education? Why or why not?

14. Do you have any comments or suggestions about modifications which would improve the curriculum or make it easier for you, or more helpful?

TGT NUTRITION UNIT--DAY 1
WEEK A

CLASSIFICATION OF FOODS INTO FOOD GROUPS

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	AT THE END OF THE LESSON, THE STUDENT SHOULD BE ABLE:			
ALL NUTRIENTS NEEDED FOR GROWTH AND DEVELOPMENT ARE AVAILABLE FROM THE FOODS WE EAT	To state the relationship between what one eats and how one feels, looks and grows, and how active one is	Teacher asks: Why do we eat? (hunger, health, appearance, energy (sports), growth).	Discussion--Point out poster. Teacher writes answers on blackboard.	National Dairy Council poster --"Milk Made the Difference" Blackboard Chalk
		Our external growth is greatly determined by heredity but food also helps the body grow-both externally and internally.		
		What internal parts of your body need foods to help them grow? (bones, muscles, teeth, organs, etc.)		
		Is it really the food that helps you look and feel healthy? (No, it is the nutrients that our body really needs; nutrients are chemical substances which compose all foods.		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		What does a well-nourished person look like? (shiny hair, nice skin, not overweight or underweight)	Show pictures of different people--children, adults--some underweight, some overweight, some pale, some sick, some healthy.	Pictures from magazines pasted onto cardboard
		Do you think these people eat foods which are good for them? Why? (People need a balanced diet to look and feel their best.)		
EATING ACCORDING TO THE BASIC 4 FOOD GUIDE CAN HELP ENSURE THAT YOU GET THE NUTRIENTS YOU NEED EVERY DAY	To state the Basic 4 Food Groups	Is there an easy way to decide what foods you need to eat a balanced diet? Let's find out....		
	To classify foods into the four food groups and miscellaneous or "other" group	These foods belong in four groups--they have some things in common. Place them into four groups and tell the class what your team decided the foods in each group have in common.	Divide students into TGT teams and give each team a grocery bag with food models representing all four food groups. Circulate through the room and give hints about what the foods may have in common. (all dairy, all fruits)	Grocery bags Nasco food models or paper food models from the National Dairy Council
		Why are the foods in the food groups that they are in? (Foods with similar nutrients are grouped together and therefore may be substituted for one another, usually.)	Show class the "Guide to Good Eating" poster about the Basic 4 food groups and the "other" group Discuss which foods are in each food group.	"Guide to Good Eating" poster from the National Dairy Council

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Group some food models into the proper food groups (in your TGT teams) and give each food group a name based on the foods that it contains.	Divide class into TGT teams and have the teams place various food models into the appropriate group. Drill class by holding up food models and asking them to classify the foods according to their food groups.	Food models
	To state that there is no recommended number of servings for the miscellaneous or "other" group because these foods contain a lot of sugar and/or fat and calories which Americans often eat in excessive amounts	Where did you put fats such as butter, margarine, bacon and oils? Where did you put the sweets? (They are in the "other" food group. This is because foods which contain a lot of sugar often add few other nutrients to our diet and are high in calories, besides. Most Americans get too much fat in the other foods they eat, such as meat. Therefore, it is not necessary to make an effort to get enough fats or sweets in our diet. It is important that you eat the recommended number of servings from each of the four basic food groups before you choose foods from the "other" food group.)	Discuss where fats (butter, margarine, bacon, cream) and sweets belong in the food group classification.	
	To break down combination foods into the four food groups and the "other" group		Discuss the fact that combination foods can be broken down into their basic parts and then classified into the food groups. (Pizza: cheese--milk group, tomato sauce--fruit/veg. group, meat in sauce--meat group, dough--bread group) Other combination foods include macaroni and cheese, tuna-noodle casserole and vegetable and beef stew.	Blackboard Chalk

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
EATING A WIDE VARIETY OF FOODS RATHER THAN ONE FOOD IS NECESSARY FOR GOOD HEALTH	To state the purpose of following the recommendations of the Basic 4 food guide	Why do you suppose the Basic 4 food guide is used? (It ensures that you get a wide variety of foods to supply the nutrients you need; therefore, it's important to choose foods from each of the four food groups several times each day.)		
IT IS NOT NECESSARY TO EAT SOMETHING FROM EACH FOOD GROUP AT EVERY MEAL, AS LONG AS YOU HAVE EATEN THE RECOMMENDED AMOUNTS FROM EACH GROUP BY THE END OF THE DAY		You don't need to include something from each food group at every meal, though—the point is to eat at least the recommended number of servings from each group by the end of the day.		
ALL PEOPLE NEED THE SAME NUTRIENTS, BUT THE REQUIREMENT FOR EACH NUTRIENT DIFFERS WITH THE PERSON'S AGE, SEX, ACTIVITIES AND HEALTH	To state the number of servings (from each food group) needed by a 10 to 12-year-old child daily	Since we said that many nutrients are used to help us grow, do you think everyone (adults and children) needs the same amount of those nutrients? (No—you need more nutrients when you are growing; therefore, a child needs more than an adult, proportional to their body size.)	Point out the number of servings a 10 to 12-year-old child needs on the "Guide to Good Eating" poster. (Show how this differs from adult recommendations.)	"Guide to Good Eating" poster
	To state that the child needs proportionately more servings from some food groups than adults because the child is still growing		Explain that an easy method to remember the recommended number of servings needed by children is "4-4-3-2" every day. (4 servings of bread/cereal group, 4 servings of fruit/vegetable group,	Blackboard Chalk

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCE	MATERIALS AND RESOURCES
		Do adults and children both need the same nutrients? (Yes--but in varying amounts)	3 servings of milk group, 2 servings of meat group)	
		Do athletes need more protein than non-athletes? (No! Your protein requirement is based on your body size, age and sex--not on the amount of activity you perform; protein has no magical properties.)	Have students recite the "4-4-3-2" pattern a few times.	
		Time permitting, you may want to show the film, "The Great Food Show" about the four food groups and the importance of variety in the diet.	Film: "The Great Food Snow" or Drill students on classification of foods into groups and number of servings recommended per food group if time permits (Have one child name a food group, another child name a food in that group, and another child tell the number of servings recommended daily from that group for a 10-12 year old child).	Film: "The Great Food Show" from Modern Talking Picture Service 16 mm Projector
			Pass out miniature copy of "Guide to Good Eating Poster" to each child.	Miniature "Guide to Good Eating" posters from the National Dairy Council for each student

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Have students complete the Four Food Groups Word Find Skilldrill A-a in TGT teams.	In TGT teams, the students should complete the Word Find Skilldrill A-a to reinforce classification of foods into food groups.	Four Food Groups Word Find Skilldrill A-a

SKILLDRILL A-a

FOUR FOOD GROUPS WORD FIND

The words below have been "hidden" according to the food groups in which they may be found. Decide which food group each food belongs to and then try to find that food in the puzzle for that group. Turn the page for puzzles.

(Example: Milk is in the milk group, so you would look for the word milk in the milk group puzzle.)

The words are written across and up and down. How many can you find? Good Luck!

"HIDDEN" WORDS TO LOOK FOR:

MILK
DRY BEANS
TOMATO
SPAGHETTI
ORANGE
EGGS
ICE CREAM
BEEF
COTTAGE CHEESE
WHOLE WHEAT BREAD
ENRICHED BREAD

CHEESE
BROCCOLI
NOODLES
GRITS
FISH
BUTTERMILK
TURNIP
CAULIFLOWER
GRAPES
CRACKERS
ROLLS

GRAPEFRUIT
CHICKEN
YOGURT
PEANUT BUTTER
ASPARAGUS
CARROT
DRY PEAS
PORK
MACARONI
CEREAL

WATERMELON
CABBAGE
MEAT
CUCUMBER
SPINACH
LAMB
CANTALOUPE
ORANGE JUICE
RICE
OATMEAL

MILK GROUP

10 TO 12-YEAR-OLDS NEED _____ SERVINGS FROM THE MILK GROUP DAILY

C	O	T	T	A	G	E	C	H	E	E	S	E
A	Y	L	A	C	U	D	V	K	M	R	K	I
E	O	U	Y	H	C	E	P	A	I	T	I	S
M	G	R	U	E	F	K	O	G	L	E	M	N
B	U	T	T	E	R	M	I	L	K	O	M	A
P	R	Y	K	S	V	S	L	G	R	V	I	R
S	T	I	C	E	C	R	E	A	M	P	L	G
G	O	F	D	F	W	S	T	A	D	C	K	S

THERE ARE 6 "HIDDEN" WORDS

MEAT GROUP

10 TO 12-YEAR-OLDS NEED ____ SERVINGS FROM THE MEAT GROUP DAILY

E	G	G	S	T	U	K	C	F	Q	S	C
D	R	Y	P	E	A	S	R	I	R	L	H
I	O	B	T	C	N	L	C	S	P	R	I
O	R	V	P	B	L	A	O	H	L	S	Q
T	M	L	K	N	R	M	G	U	C	N	K
P	E	A	N	U	T	B	U	T	T	E	R
H	A	I	C	B	E	E	F	N	R	L	I
G	T	R	E	O	L	H	P	O	R	K	W
A	R	D	R	Y	B	E	A	N	S	R	L
C	H	I	C	K	E	N	W	R	E	C	X

THERE ARE 10 "HIDDEN" WORDS

FRUIT AND VEGETABLE GROUP

10 TO 12-YEAR-OLDS NEED _____ SERVINGS FROM THIS GROUP DAILY

S R A K D T O M A T O U

X Z K P E U G C B N S S

O N C A R R O T R U B A

R I L C F N F M H H V G

A C A U L I F L O W E R

N A S C O P N C S F W A

G B P U W Q J B M O H P

E B A M A L O R A N G E

J A R B T K O O R H R F

U G A E E U R C Z N A R

I E G R R H G O Z C P U

C D U M M J S L O U E I

E F S P E H N L Y S S T

I G K R L S P I N A C H

O H Z X O U G O M C B V

R J C A N T A L O U P E

THERE ARE 15 "HIDDEN" WORDS

BREAD AND CEREAL GROUP

10 TO 12-YEAR-OLDS NEED _____ SERVINGS FROM THIS GROUP DAILY

C A C B U E B H O W M

R O L L S N M I D H X

P R C H I R I C E O C

T I E M N I H G F L R

Q D R J P C Z Q P E Z

R R E C F H T J M W D

S P A G H E T T I H J

Z U L P W D Q C Y E P

Q H T M L B T V W A Y

P M A C A R O N I T B

N O O D L E S Z K B H

J S P C R A C K E R S

G R I T S D V H Z E U

Z I C P O A T M E A L

P M F N V U P N P D P

THERE ARE 11 "HIDDEN" WORDS

WEEK A--DAY 2

SERVING SIZES AND RECOMMENDED NUMBER OF FOOD GROUP SERVINGS

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
SERVING SIZES OF FOODS WITHIN ONE FOOD GROUP VARY DEPENDING UPON THE AMOUNT OF THE MAJOR NUTRIENTS EACH FOOD CONTAINS		See accompanying Daily Food Guide sheet on page 49 for serving size information.		
FOODS WITHIN ONE FOOD GROUP CONTAIN THE SAME NUTRIENTS AS OTHER FOODS IN THAT FOOD GROUP (FOODS ARE GROUPED ACCORDING TO NUTRIENT CONTRIBUTIONS)		The amount of food that equals one serving is the amount of that food which supplies the same amount of specific nutrients supplied by one serving of other foods within that food group.		
		For example, 1 cup of milk has the same amount of calcium (a nutrient) as 2 cups of ice cream; therefore, 1 c. milk is one serving from the milk group, and 2 c. ice cream is also one serving.	Show class how much 1 c. milk and 2 c. ice cream are.	Measuring cups
ONE SERVING OF A FOOD IN ONE FOOD GROUP DOES NOT NECESSARILY HAVE THE SAME NUMBER OF CALORIES AS ONE SERVING OF ANOTHER FOOD IN THAT FOOD GROUP. THUS, SOME FOODS ARE MORE EFFICIENT SOURCES OF NUTRIENTS THAN OTHERS WITHIN THE SAME FOOD GROUP	To identify foods which supply the most nutrients per serving	Even though 1 c. milk has the same amount of calcium as 2 c. ice cream, you get more than two times more calories and more sugar from that amount of ice cream. Therefore, milk is a much better source of calcium than ice cream.		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To state the amount of commonly used foods which equal one serving of their respective food groups	Generalizations about serving sizes of food groups: 1 serving of milk group = 1 c. milk = 1 oz. cheese = 2 c. ice cream. 1 serving of meat group = 2-3 oz. meat = 2 eggs = 1 c. (cooked) dry beans or peas = 4 tbsp. peanut butter. 1 serving of fruit/vegetable group = 1/2 c. vegetable or fruit (if it comes in pieces) = 1/2 c. fruit juice = 1 medium vegetable or fruit (if it comes in whole parts except melon) = 1/2 melon or grapefruit. 1 serving of the bread/cereal group = 1 slice bread = 1/2 c. cereal = 1/2 c. pasta = 5 crackers.	Show food models or measuring cups which correspond to the serving sizes discussed.	Nasco food models or Dairy Council paper food models Measuring cups Tablespoon
FOODS FROM ALL FOUR FOOD GROUPS DON'T HAVE TO BE EATEN AT EVERY MEAL, BUT FOUR SERVINGS OF THE FRUIT/VEGETABLE GROUP AND BREAD/CEREAL GROUP, THREE SERVINGS OF THE MILK GROUP AND TWO SERVINGS OF THE MEAT GROUP (4-4-3-2) SHOULD BE EATEN BY THE END OF THE DAY		To ensure that you are eating a well-balanced diet, be sure that you have eaten the "4-4-3-2" way. You DO NOT necessarily have to eat one serving from each food group at every meal--servings from some of the food groups can be eaten as snacks, too.		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Let's see the amount of different foods which actually equal one serving from each of the food groups.	Briefly review how foods are basically measured: meats, fish--in ounces; vegetables--in cups; some fruits--in cups and some fruits--by the piece; milk--in cups; bread--in slices; dry beans and peas (after cooking)--in cups; pasta and cereals--in cups; peanut butter--in tablespoons.	
			Divide the class into TGT teams.	
			Let each team cut and weigh or measure one serving of each of the following foods: Cheese-(cut and weigh amount equal to one serving of milk group (1 oz.). Mention that meat is also measured in oz., and that 2-3 oz. meat = 1 serving meat.) Peanut butter-(scoop out what they think is one serving with a spoon, and then have them actually measure 4 Tbsp. Let them spread this large amount on bread so that they see how much it is!)	Cheese (in bar so it can be cut) Peanut butter Canned vegetable and fruit Cereal Water Bread Knives (to cut cheese) Scale (to weigh cheese) Knives and spoons (to dish food from cans and spread peanut butter) Glasses Bowls 1 c. liquid and 1/2 c. dry measuring cups Tablespoon measure

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
			Canned vegetable and fruit-(let them guess what 1/2 c. would be, then let them check this with a measuring cup.) Cereal-(let them put what they think is 1/2 c. cereal in a bowl, and then have them use measuring cups to check their estimate.) Water-(let them pour what they think would equal 1 c. milk into a glass, and then let them check their guess with measuring cups.) Bread-(let them decide that one slice = one serving.) or	
		Were your estimates of what constituted one serving of various foods accurate? Were you surprised at the amount of some foods that equaled one serving?	Let the children become familiar with the serving sizes of various foods by using the food models to depict the serving sizes of foods in each of the four food groups. Discuss the children's findings and reactions.	Nasco food models or Dairy Council paper food models

DAILY FOOD GUIDE--THE BASIC 4 GROUPS*

Food Group	Nutrients	Daily Amounts
MILK GROUP Milk, cheese, ice cream, yogurt	Calcium Protein Riboflavin	Adults: 2 or more c. Children 1 to 9 yrs.: 2-3 c. 9 to 12 " : 3 or more c. Teens : 4 or more c. Pregnant women : 3 or more c. Lactating women : 4 or more c.

1 c. = 8 oz.; milk equivalents: 1 oz. cheddar cheese, 1½ c. cottage cheese; 1/4 c. nonfat dry milk; 1/2 c. evaporated milk, undiluted; 1 c. ice milk; 2 c. ice cream; 1 c. fluid skim milk or buttermilk.

* *

MEAT GROUP Beef, veal, lamb, pork, poultry, fish, eggs, dry beans, dry peas, nuts, peanut butter	Protein Iron Thiamin Niacin Riboflavin	Two or more servings Count as one serving: 2 - 3 oz. lean, boneless, cooked meat, fish, or poultry; 2 eggs; 1/2 c. tuna fish; 1 c. cooked dry beans; peas; 4 tbsp. peanut butter.

* *

VEGETABLE & FRUIT GROUP	Vitamins Minerals	Four or more servings Count as one serving: 1/2 c. vegetable or fruit; one medium apple, banana, orange, potato; 1/2 grapefruit or melon
	Vitamin A Vitamin C	Include: One dark-green or deep-yellow vegetable or fruit rich in Vitamin A at least every other day, and a citrus fruit or other fruit or vegetable rich in Vitamin C daily. 4 oz. orange juice = 1 serving

* *

BREAD & CEREAL GROUP	Thiamin Riboflavin Niacin Iron Protein	Four or more servings of whole grain, enriched or restored Count as one serving: 1 slice bread; 1 oz. (1 c.) ready-to-eat cereal, flake or puffed varieties; 1/2 to 3/4 c. cooked cereal; 1/2 to 3/4 c. pasta (macaroni, spaghetti or noodles) 5 saltine crackers; 2 squares graham crackers

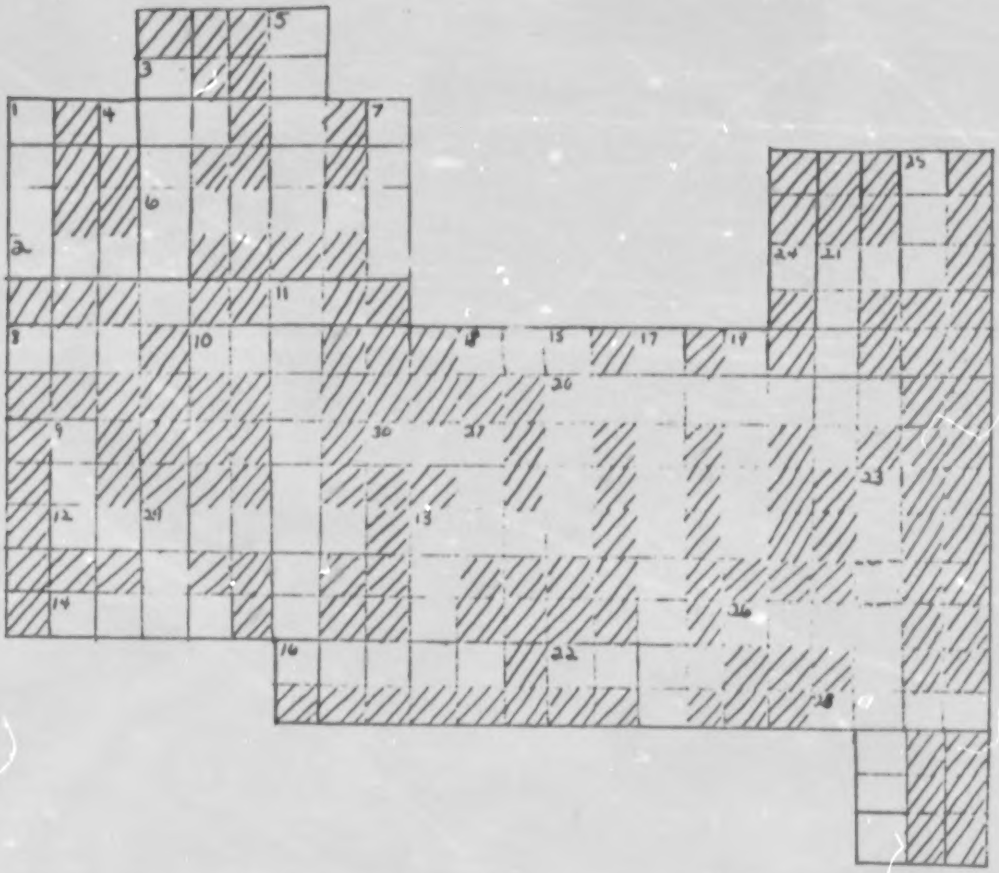
---

*Used by Eleanor Williams in nutrition courses at the University of Maryland, 1978.

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Here is a crossword puzzle activity about serving sizes and food groups--Skilldrill A-b.	In teams, the children should complete the serving sizes Crossword puzzle Skilldrill A-b.	Crossword Puzzle Skilldrill A-b Pencils

CROSSWORD PUZZLE SKILLDRILL A-b

DID YOU EAT THE BASIC FOUR TODAY?



The answers to the crossword puzzle are found below:

HALF
MEAT
CUP
FOUR
TWO
THREE
OATMEAL
ASPARAGUS
VEGETABLE
MISC.
TEA

FRUIT
YES
RICE
EIGHT
ONE
CEREAL
CUP
OUNCES
TWO
PEAS

MILK
TBSP.
ICE CREAM
FOUR
SLICE
BREAD
LESS
NUTRIENTS
ONE
TWO

The missing words in these sentences are found in the word list below the crossword puzzle. Find the word that completes the sentence from the list and then write it in the correct spaces in the puzzle.

USE PENCIL IN CASE YOU WANT TO CHANGE A WORD.

DOWN:

1 Sixth graders need ____ servings from the fruit and vegetable group each day.

3 Two to three ____ of chicken equal one serving from the meat group.

5 Sixth grade students need ____ servings from the milk group each day.

7, 25, & 27 ____ (27) ounce of cheese and 1 ____ (25) of yogurt are both one serving of the ____ (7) group.

9 & 13 ____ (9) eggs(s) equal(s) one serving of the ____ (13) group. (Beware: Be sure to fill 13 in ACROSS, not down!)

11 One-half cup of this long, thin, green vegetable equals one serving from the fruit and vegetable group.

13 Butter, oils, bacon, cookies and candy belong to this group. (Abbreviation of the group)

15 ____ ounce(s) of milk equals one serving of the milk group.

17 Potatoes, broccoli, spinach, carrots, green beans and celery are all examples of this word.

19 Strawberries, apples, peaches, cantaloupes and oranges are all examples of this word.

21 One-half cup spaghetti or noodles could be substituted for another food in the ____ and cereal group to equal one serving from that group.

23 It is the ____ which foods contain which help you grow and keep you healthy.

29 A favorite drink in England which is used often instead of coffee.

ACROSS:

2 & 12 One-half cup ____ or 1/2 cup ____ are both one serving
(2) (12)
from the bread and cereal group.

4 & 22 One-half ____ broccoli or one-____ cup corn are both one
(4) (22)
serving of the fruit and vegetable group.

6 One slice of bread could be replaced by 1/2 cup of hot or cold ____ to equal one serving of the bread and cereal group.

8 Sixth grade students need ____ servings from the meat group each day.

10 Yes or No? It is better to eat whole grain or enriched breads and cereals (rather than nonenriched items) because they have more nutrients.

14 One full cup of dry ____ (cooked) equals one serving from the meat group.

16 One ____ whole wheat bread equals one serving from the bread and cereal group.

18 One full cup (one serving) dry beans is equal to ____ serving(s) of steak.

20 Two cups ____________ equals one serving of the milk group.

24 Four ______________ peanut butter are equal to 2 or 3
(abbreviation)
ounces of meat (which equals one serving of the meat group).

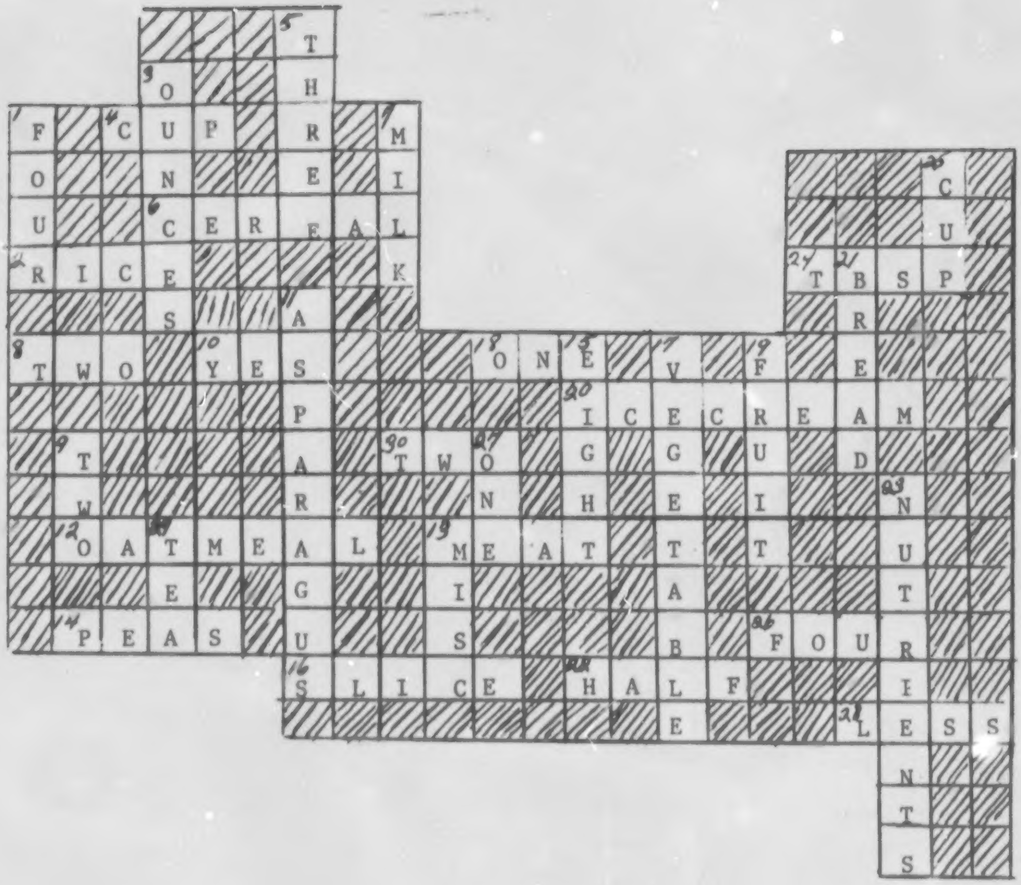
26 Sixth graders need ____ servings from the bread and cereal group each day.

28 A full-grown adult would need ________ nutrients than a
growing child. (more, less)

30 ________ or 3 ounces of chicken or fish equal one serving from the meat group.

CROSSWORD PUZZLE SKILLDRILL A-b

ANSWERS: DID YOU EAT THE BASIC FOUR TODAY?



WEEK A--DAY 3

COOKING PIZZA AND ANALYZING YOUR OWN DIET

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
SOME COMBINATION DISHES ARE COMPRISED OF FOODS FROM MORE THAN ONE FOOD GROUP	To follow a recipe	See pizza recipe on page 56	Prepare and cook the pizza	Kitchen utensils Food supplies (see recipe) Copies of the recipe which the student can take home
	To measure ingredients		Let the students each have a copy of the recipe to take home.	
	To preheat an oven			
	To measure, grate, sprinkle, pinch and chop foods	How can pizza be classified according to the four food groups?		
	To separate and classify foods in a combination dish according to the four food groups	Tomato sauce--fruit/vegetable group Cheese--milk group Dough--bread/cereal group Meat (in sauce)--meat group		
	To taste new vegetables and spices			
	To state safety precautions to be observed in the kitchen	Wash hands before beginning. Discuss precautions when using sharp utensils. Don't run. Use pot holders to remove hot things from the oven. Immediately mop up any spills.		

PIZZA RECIPE

2 pkg. yeast
2 cups warm water
4 tbsp. oil
2 tbsp. sugar
2 tsp. salt
5 cups flour

1 quart tomato sauce with meat
1 pkg. mozzarella cheese
1/2 can parmesan cheese
oregano
garlic

MIX together yeast and warm water. ADD remaining ingredients in a large mixing bowl. COVER and place in a dark warm place (like an unheated oven) for 5 minutes (or until it rises--may take a little longer). Spread dough in the pan evenly. PUNCTURE with a fork. ADD sauce (1 quart per pan) and cover with 1 package of mozzarella cheese per pan. Sprinkle top with parmesan cheese. ADD oregano and garlic to taste.

Bake at 425°F. for 20-25 minutes (or until the cheese melts and it looks done--make take a little longer).

This recipe makes enough pizza to fill an 8" x 15" pan. It should serve at least 15 people.

OR

English muffin halves may be used instead of the dough to make individual pizzas. Lightly toast each muffin half and then cover with tomato sauce, mozzarella cheese and parmesan cheese. Broil about 5 minutes, or until the cheese melts.

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To list other combination dishes and classify them according to the food groups	Let's classify other combination dishes according to their food groups: Tuna-noodle casseroles--meat, bread/cereal and milk groups (if you add cheese or cream of mushroom soup), and the vegetable/fruit group (if you add celery) Macaroni and cheese--milk and bread/cereal groups Beef stew--meat and vegetable/fruit groups Falafel--(Mideastern)--meat, bread/cereal, and vegetable/fruit groups Taco--(Spanish)--meat, milk, bread/cereal and vegetable/fruit groups	Discuss combination dishes--separate the different foods which comprise the dish and then classify them according to the Basic 4 food groups. If time permits, discuss again how to classify fats and sweets ("other" group).	
FOOD FROM DIFFERENT COUNTRIES CAN BE CLASSIFIED ACCORDING TO THE BASIC 4 MEAL PLAN		Different countries' foods can fit the Basic 4 pattern.		
THE BASIC 4 FOOD GUIDE CAN BE USED TO BEGIN TO ANALYZE AN INDIVIDUAL'S FOOD HABITS	To remember what she/he ate over the last 24 hours	While pizza is cooking, ask students to write down everything they have eaten starting from (time) today through (same time) yesterday on Dietary Recall Skilldrill A-c.	While the pizza is cooking, the students will record what foods they had eaten over the last 24 hours on Skilldrill A-c. Snacks and beverages should be included.	Dietary Recall Skilldrill A-c Pencils

DIETARY RECALL SKILLDRILL A-c

Think back over the last 24 hours. Make a list of all the foods you have eaten. Remember to include snacks and beverages.

In the proper column below, write the foods you ate, the amount of each food you ate (serving size), and the times when you ate. Then classify the foods according to their food groups.

Fill in the total number of servings you ate from each of the four food groups and the "other" group on the bottom of this page.

TIME EATEN	SERVING SIZE	FOODS EATEN	FOOD GROUP

Total number of servings:

_____ serving(s) from milk group

_____ serving(s) from meat group

_____ serving(s) from fruit/ vegetable group

_____ serving(s) from bread/cereal group

_____ serving(s) from "other" group

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To estimate serving sizes of foods eaten during the last 24 hours	Serving sizes should be estimated as accurately as possible.	If the students have trouble recalling serving size, food models may remind them about how much they ate.	Food models
	To complete a 24-hour dietary recall		Circulate and help students with any problems which may arise.	
	To analyze their own 24-hour recall, noting which food group recommendations were not met	Have students analyze their own diets by totaling the number of servings they ate from each of the four food groups and the "other" group.	You may want to collect these and ask the students to do another dietary recall at the end of the unit to see if there are changes in their eating patterns.	
THE DAY'S TOTAL SHOULD BE 4-4-3-2 TO MEET THE BASIC 4 FOOD RECOMMENDATIONS		Did you meet 4-4-3-2?		
	To suggest ways to improve a diet, if needed, based on the Basic 4 food guide	If you need to improve your diet, write down how you could do so.		
EATING IS A SOCIAL EVENT	To exhibit proper table manners when eating with classmates	Assess the appropriateness of the table manners of the class and discuss manners accordingly.	Have the students set the table and eat their pizza with other members of their group.	Dishes
	To set the table properly			
	To clean the kitchen and utensils thoroughly			
		Discuss how nice a meal with friends can be.	Have the students clean up the table, dishes and equipment.	

TEAM WORKSHEET A: PLANNING A WELL-BALANCED DIET

1. What amount of dry beans or peas equals one serving from the meat group?

2. Yes or No? If Alice eats one-half grapefruit instead of one banana, will she still have eaten one serving from the fruit and vegetable group?

3. Which two of the following foods do not belong to any of the Basic 4 food groups: cake potato bacon cheese?

4. Jimmy ate the following foods one day. He did not meet the Basic 4 recommendations. Which two food groups were deficient?

    1/2 c. milk
    1/2 c. orange juice
    1/2 c. cereal

    1 egg
    2 slices whole wheat bread
    butter
    1 large (1/2 c.) carrot
    1/2 c. grapes
    1 c. ice cream

    1 c. dry beans
    1 c. salad with tomatoes
    1/2 c. broccoli
    1/2 c. rice
    1 coke
    1 apple

    Snack: 2 graham crackers
    1/2 c. milk

5. To which group would grits and cornbread belong?

6. True or False? A well-balanced diet has an important influence on your health, appearance, energy and growth.

7. Who would need more nutrients in proportion to body size, a growing child or a full-grown adult?

8. Teenagers grow very quickly. Do you think a teenager would need more nutrients than an adult?

9. Name the number of servings which a sixth grader should eat daily from each food group.

10. Which food group do cheese, yogurt and cottage cheese belong to?

11. To which food group do dry peas, eggs, peanut butter and fish belong?

12. True or False? Athletes need more protein than people who are not athletic.

13. True or False? The foods in one food group supply the same nutrients as other foods in that food group.

14. To which group does a potato belong?

15. True or False? Richie must eat one serving from each food group at every meal to have a well-balanced diet.

16. True or False? Since butter, jelly, pie, candy and cookies supply mainly calories and few nutrients, they are not part of any of the four basic food groups.

17. What amount of ice cream must you eat to get the same number of nutrients that you get from one 8-ounce glass of milk? Which food is a better source of nutrients, then?

18. Stacy had one orange, 1/2 c. broccoli, and one-half cantaloupe one day. How many servings did she have from the fruit and vegetable group?

19. In general, how much of a vegetable equals one serving?

20. How much meat, fish or poultry equals one serving?

21. How much pasta (noodles or rice) equals one serving?

22. True or False? Pizza contains only foods from the bread and cereal food group.

23. Which group would turnips and cauliflower belong to?

24. Ben prides himself on always eating two servings of bread, one serving of meat, two servings of fruit/vegetable and one serving of milk at lunch. Which food group is Ben missing a serving from?

Lunch: 4 tbsp. peanut butter on one slice enriched bread
1 c. lemon yogurt
1/2 grapefruit
1/2 c. lettuce
French dressing
4 cookies
Water

25. Which food group does cheese belong to?

26. Which group does a toll house (chocolate chip) cookie belong to?

27. How much peanut butter equals one serving of the meat group?

28. True or False. Enriched and whole grain breads and cereals have more of some nutrients than nonenriched products.

29. Which food groups would macaroni and cheese belong to?

30. Can one orange be substituted for one-half grapefruit, yet still provide one serving from the fruit and vegetable group?

ANSWERS TO TEAM WORKSHEET A

1. 1 cup
2. yes
3. Cake and bacon
4. Milk and meat groups (2 c. ice cream = one serving milk and two eggs = one serving meat)
5. Bread/cereal group Grits is a hot cereal Cornbread--a cake-like bread
6. True
7. Growing child--growing requires a lot of nutrients
8. Yes--they are still growing
9. Three milk, two meat, four fruit and vegetable, four bread and cereal
10. Milk
11. Meat
12. False
13. True
14. Fruit and vegetable group
15. False
16. True
17. 2 c.; milk is better source of nutrients
18. Three
19. 1/2 c
20. 2-3 ounces
21. 1/2 cup
22. False
23. Fruit/vegetable group (they are both vegetables)
24. Bread/cereal group
25. Milk group
26. Miscellaneous or "other" food group
27. 4 tbsp.
28. True
29. Bread/cereal group and milk group
30. Yes

WEEK A--DAY 5

TOURNAMENT

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To earn points for his/her team and for himself/herself by correctly answering questions based on the behavioral objectives in the curriculum for that week		Divide class into tournament tables as specified by the format in the TGT Teacher Guide (p. 8).	TGT Teacher Guide
			Start the tournaments and explain the "Rules of Play" (p. 9 in TGT Teacher Guide).	
			Pass out copies of "GIGS" to each team on page 65 of this curriculum.	Copies of "GIGS" for each team
			Pass out Game A, Planning a Well-Balanced Diet, Game A Answer Sheet and Game Score Sheet to each team.	Copy of Game A, Planning a Well-Balanced Diet, for each team Copy of Game A Answer Sheet for each team
			Circulate throughout the class to answer any questions.	Game Score Sheet for each team (p. 12 in TGT Teacher Guide)
			Fill out Team Summary Sheet, Tournament Score Sheet, and publicize the results. (see TGT Teacher Guide, pp. 11-16). Divise new tournament tables according to the "bumping" procedure (p. 13).	TGT Teacher Guide Team Summary Sheet Tournament Score Sheet Newsletter for publishing tournament results

GIGS: GENERAL INSTRUCTIONAL GAME STRUCTURE*

MATERIALS NEEDED: (1) Deck of question cards; (2) Rules; (3) Answer Sheet

The Rules

1. To start the game, shuffle the deck of cards and place it face down on the table. Decide who will be player number 1. Play is clockwise from player number 1.

2. Each player (when it is his or her turn) must take the top card from the deck, read it aloud and do one of two things:

   a. Answer the question immediately and ask if anyone wants to challenge the answer. The player to the right of the person giving the answer has the first chance to challenge. If he or she does not wish to challenge, the next player to the right can challenge.

   b. If he or she does not know the answer, or is not sure of the answer, ask if another player wants to give an answer. If no one wants to give an answer, the card is placed on the bottom of the deck. If another player gives an answer, the procedure described above is followed.

3. If there is no challenge, another player should check the answer. In the lower right hand corner of each card, there is a letter and a number; use this to find the answer on the answer sheet.

   a. If the answer is correct, the player keeps the card;

   b. If the answer is wrong, the player must place the card on the bottom of the deck.

4. If there is a challenge and the challenger decides not to give an answer:

   a. If the original answer is wrong, the player must place the card on the bottom of the deck;

   b. If the original answer is correct, the player keeps the card and the challenger must give up one of the cards he or she has already won (if any) and place it on the bottom of the deck.

5. If there is a challenge and the challenger gives an answer:

   a. If the challenger's answer is correct, the challenger receives the card;

b. If the challenger gives the wrong answer, and the original answer is correct, the challenger must give up one of the cards he or she has already won (if any) and place it on the bottom of the deck;

c. If both the challenger's answer and the original answer are wrong, the card is placed on the bottom of the deck.

6. At the end of the game, when there are no more cards in the deck, each player counts up the number of cards he or she has and records this number as his or her score. The player who has the most cards is the winner.

---

* Reprinted With Permission From: Fennessey, G., D. L. DeVries, and K. Edwards, Using Teams-Games-Tournament (TGT) in the Classroom. Second edition Center for Social Organization of Schools, The Johns Hopkins University, 1974, p. 17.

GAME A ANSWER SHEET

PLANNING A WELL-BALANCED DIET

OBJECTIVE: To classify foods according to their food groups.

To state the number of servings and the serving sizes recommended daily for a 10 to 12-year-old according to the Basic 4 food guide.

To plan a nutritious, well-balanced diet based on the recommendations of the Basic 4 food guide.

ANSWERS

A-1 1 oz. (one slice)

A-2 1 cup

A-3 miscellaneous or "other" group

A-4 4 tbsp.

A-5 false

A-6 milk group

A-7 1/2 c.

A-8 true

A-9 bread and cereal group

A-10 growing child

A-11 Two

A-12 Three

A-13 Four

A-14 Four

A-15 bread and cereal group and milk group

A-16 true

A-17 true

A-18 true

A-19 yes--proportional to body size, teens need more

A-20 fruit and vegetable group

A-21 Three

A-22 1/2 c.

A-23 vegetable and fruit group

A-24 yes

A-25 miscellaneous or "other" group

A-26 one doughnut

A-27 2-3 oz.

A-28 1/2 c.

A-29 true

A-30 true

GAME A: PLANNING A WELL-BALANCED DIET

How much cheese equals one serving from the milk group?

A-1

What amount of dry beans or peas equals one serving from the meat group?

A-2

To which group does a toll house (chocolate chip) cookie belong?

A-3

How much peanut butter equals one serving of the meat group?

A-4

True or False? The Basic 4 food guide recommends that children have four servings from the miscellaneous or "other" group daily.

A-5

To which group does 1 c. of yogurt belong?

A-6

How much spinach or brussels sprouts would equal one serving of the fruit and vegetable group?

A-7

True or False? One cup of green beans equals two servings of the fruit and vegetable group.

A-8

To which group would grits and cornbread belong?

A-9

Who needs more nutrients in proportion to body size, a growing child or a full-grown adult?

A-10

How many servings of the meat group should a sixth grader eat daily?

A-11

How many servings of the milk group should a sixth grader eat daily?

A-12

How many servings of the bread/cereal group should a sixth grader eat daily?

A-13

How many servings of the fruit/vegetable group should a sixth grader eat daily?

A-14

To which food groups would macaroni and cheese belong?

A-15

True or False? While children and adults need the same nutrients, children need proportionately more of certain nutrients because they are still growing.

A-16

True or False? Since different foods supply different nutrients, it is important to eat a variety of foods every day.

A-17

True or False? Jack had 1 c. milk, one-half grapefruit, 1/2 c. cereal and a 2-oz. hamburger. Jack has eaten one serving from each of the four food groups.

A-18

Teenagers grow very quickly. Do you think a teenager would need more nutrients than an adult?

A-19

To which group does a potato belong?

A-20

Stacy had one orange, 1/2 c. broccoli and one-half cantaloupe one day. How many servings did she have from the fruit and vegetable group?

A-21

In general, how much of a vegetable equals one serving?

A-22

To which group does cabbage belong?

A-23

Can one orange be substituted for one-half grapefruit, yet still provide one serving from the fruit and vegetable group?

A-24

To which food group would margarine belong?

A-25

Which of the following is not one serving of the bread and cereal group:

1 slice whole wheat bread,
½ c. cereal,
½ c. spaghetti, or
1 doughnut

A-26

How much meat, fish or poultry equals one serving?

A-27

How much pasta (noodles or rice) equals one serving?

A-28

True or False? A food from each food group need not be eaten at every meal as long as the 4-4-3-2 pattern is reached before you go to bed.

A-29

True or False? It is the nutrients in food rather than the food itself which help us grow and remain healthy.

A-30

WEEK A--DAY 4

TEAM PRACTICE SESSION

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
THE BASIC 4 MEAL PLAN MAY BE USED TO PLAN AND ANALYZE AN INDIVIDUAL'S DAILY DIETARY INTAKE	To plan a day's menu which adequately adheres to the Basic 4 meal plan To make suggestions for meeting the Basic 4 meal plan if there is a deficit in one or more of the food groups	In your TGT teams, plan a well-balanced diet for 1 day based on the Basic 4 food group recommendations.	Divide the class into TGT teams. Have the teams plan 1 day's diet, including snacks, which meets the Basic 4 recommendations. The food models may be used or the teams can record their meal plan on paper. Circulate through the class to check the meal plans and answer questions.	Food models or Paper and pencils
	To encourage teammates to learn the right answer (thereby fostering peer tutoring and learning of the materials)	Tell the class the purpose and format of the team practice session as explained in the TGT Teacher Guide (p. 8). Have the TGT teams complete Worksheet A, Planning a Well-Balanced Diet, in their team practice session.	TGT team members work together to answer questions on Worksheet A which will be similar to the questions asked during tomorrow's tournament.	TGT Teacher Guide from Argus Communications Worksheet A: Planning a Well-Balanced Diet Pencils

TGT NUTRITION UNIT--DAY 1
WEEK B

FOOD SOURCES OF NUTRIENTS

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
YOU NEED NUTRIENTS FROM A VARIETY OF NUTRITIOUS FOODS TO GROW AND BE HEALTHY	To state the relationship between a well-balanced diet and growth and health To state the relationship between a poor diet and growth and health	Compare the weight charts of the two rats Why does one rat weigh more than the other rat? (better diet) What other differences do you notice between the rats? (temperament, shiny coat) How does this experiment apply to what *you* eat?	Compare and discuss rat demonstration charts. Children plot the rats' weights on a wall chart from the beginning of the unit. Point out differences in the shine of the coat and the irritability.	National Dairy Council's rat demonstration booklet--feed one rat nutritious foods and one rat sugary, non-nutritious foods (also available from the National Agricultural Library). Weight charts posted on wall 20-day old white rats (from a university or pet store) Cages and water bottles Scale Food for rats and bowls for food Gloves for handling rats Newspaper for rat droppings
IT IS NEVER TOO LATE TO IMPROVE YOUR DIET		If the rats both start eating well, what do you think will happen to the smaller rat? (He will grow and his coat will be shiny just like the rat who always ate a well-balanced diet.)	Discuss the experiment. Do the experiment again--give both rats the same well-balanced diet so that the malnourished rat will grow and be healthy, too.	
IT IS THE NUTRIENTS IN FOOD THAT HELP YOU GROW AND KEEP YOU HEALTHY	To identify the major nutrients found in foods in each of the food groups	It is the nutrients in food that help you grow and keep you healthy. There are over 50 nutrients that we need, but they can be broken down into six categories: protein, carbohydrate, fat, vitamins, minerals and water.	Write the six nutrients on the board	Blackboard Chalk

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
THE BASIC 4 IS DIVIDED SO THAT MOST FOODS IN EACH GROUP PROVIDE THE SAME MAJOR NUTRIENTS AS OTHER FOODS IN THAT GROUP	To state that foods are divided into the four food groups and the "other" group based on the nutrients the food contains	Let the TGT teams divide the foods on the Dairy Council comparison cards into their food groups (the four food groups and "other").	Divide class into TGT teams. Explain that the comparison cards tell the amount of certain nutrients which the foods contain.	National Dairy Council comparison cards Paper for each team Pencils
IF YOU GET ENOUGH OF THESE NUTRIENTS (PROTEIN, VITAMINS A & C, MINERALS CALCIUM AND IRON, CARBOHYDRATE AND FAT) FROM THE FOODS EATEN, YOU WILL PROBABLY CONSUME ENOUGH OF ALL 50 NUTRIENTS NEEDED		Ask the teams to write down the major nutrients the foods in each group have in common--protein, Vitamins A & C, calcium and iron.	Write down the major nutrients which foods in each group have in common	
		Since the cards do not show the amount of carbohydrate or fat a food contains, tell them that the fruit/vegetable and bread/cereal groups both supply carbohydrate; foods in the "other" group supply mainly carbohydrate (sweets) or fat (butter).	or You may test foods chemically to determine if they have protein, sugar, starch, fat, minerals or Vitamin C.	Directions for these experiments in "Big Ideas" for fourth through sixth grades, National Dairy Council or School Lunch and the Curriculum from the West Virginia Department of Education, pp. 100-102
NO ONE FOOD SUPPLIES ALL THE NUTRIENTS YOUR BODY NEEDS		Discuss classification according to the food groups.	Check to see if they've classified them correctly (class discussion).	
A VARIETY OF FOODS SHOULD BE EATEN TO SUPPLY THE NUTRIENTS NEEDED		What nutrients are in each group? Milk group--supplies protein and calcium; Meat group--supplies protein and iron; Fruit and vegetable group--Vitamins A and C and carbohydrate;	Milk group cards--ice cream, cottage cheese, cheese, skim milk, buttermilk, milk; Fruit & Vegetable cards--fruit salad, tossed salad, banana, orange juice, grapefruit, tomato, sweet potato, leafy greens, carrots, potato;	

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Bread and cereal group--iron and carbohydrate; "Other" group--carbohydrate and fat.	Meat group cards--baked beans, egg, pork chop, chicken, fish, liver, meat patties, hamburger, frankfurter; Bread/cereal cards--frankfurter bun, cooked cereal, bread; "Other" cards--butter (although it looks high in Vitamin A, it is mostly fat & calories), bacon (although it looks high in protein, it is mostly fat & calories), potato chips (note--more calories than any major nutrient), cake, french dressing, cookie, soft drink, jelly.	
	To identify specific sources of major nutrients	Some foods in the fruit and vegetable group supply Vitamin A and some supply Vitamin C; all supply carbohydrate.		
	To name three good sources of Vitamin A	Some examples of Vitamin A sources are: dark, leafy green vegetables or deep yellow (orange) fruits and vegetables.	Write some Vitamin A sources on the blackboard.	
		Can you name some examples? (apricots, carrots, cantaloupe, pumpkin, winter squash, sweet potatoes--notice all are orangish; leafy greens such as collard greens, turnip greens, mustard greens, spinach, broccoli and brussels sprouts)	Show samples of winter squash, collard greens, spinach, mustard greens, turnip greens, apricots and broccoli, and taste them. (Note--collard, turnip and mustard greens may be better when cooked.)	Winter squash, collard greens, spinach, mustard greens, turnip greens, apricots, broccoli
	To state how often a good source of Vitamin A should be eaten	Vitamin A can be stored in the body, so it does not need to be eaten every day--it should be eaten every other day, though.		Blackboard Chalk
	To state three good sources of Vitamin C	Some examples of Vitamin C sources are citrus fruits.	Write some Vitamin C sources on the blackboard.	Green peppers, cabbage, citrus fruits

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		What are some citrus fruits? (oranges, orange juice, grapefruit, grapefruit juice, tangerines, lemon, limes)	Show examples of some good sources of Vitamin C and taste them.	
		Other Vitamin C sources include broccoli and spinach (same as for Vitamin A), cabbage, green peppers, white potatoes, cantaloupe, strawberries and tomatoes.		
	To state how often a good source of Vitamin C should be eaten	A Vitamin C source should be eaten every day, since this vitamin cannot be stored in the body.		
		Do you eat a source of Vitamin C every day?		
	To state three good sources of iron.	Iron is found mainly in the meat group and the bread and cereal group. What do you think are some good sources of iron from these groups? (Liver is the BEST source of iron. Other sources are dry beans, dry peas and red meat. Breads called "enriched bread" are good sources of iron; enriched means that the nutrients such as iron which are lost when the bread flour	Write some sources of iron on the blackboard--concentrate on those sources which are in the meat and bread and cereal group. Show bread label that has "enriched" written on it. Show a whole wheat bread or cereal label.	"Enriched bread" label "Whole wheat" product label

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		is made, have been added back to the bread. Whole grains such as whole wheat bread and whole wheat cereal--All Bran, Grape-nuts, etc. are good iron sources because the iron is not removed when these products are made. Raisins, prunes and prune juice are also good sources of iron as are spinach and other greens.)		
	To state three good sources of calcium	Calcium sources are mainly found in the milk group. What are some good calcium sources? (Milk, yogurt, buttermilk, cheese. Ice cream has calcium, but is not as good a source as these other milk products. Collard greens and other dark leafy green vegetables are also good sources.) Which is the better source of nutrients, ice cream or milk? (milk)	Write some sources of calcium on the blackboard. Obtain the milk comparison card and the ice cream comparison card from the teams and show the difference in the calcium and protein levels in these two foods: milk has more than twice the nutrients of ice cream; therefore, you'd have to eat twice as much ice cream, and get twice as many calories to obtain the same amount of nutrients as in milk.	Milk comparison card Ice cream comparison card
	To state how often these two minerals should be eaten	Both calcium and iron sources are needed by the body every day. It is sometimes hard to get enough iron in the diet, so make a special effort to eat foods high in iron!		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
VITAMIN AND MINERAL SUPPLEMENTS (PILLS) DO NOT SUPPLY ENERGY TO THE BODY	To state the three nutrients which supply energy	There are only three nutrients which supply "energy" to the body. The amount of energy a food supplies is measured in calories. Have you heard of the word calories? These three nutrients which supply calories are protein, carbohydrate and fat.	Discussion Write "calories" on blackboard. (It is the same as kilocalories. A kilocalorie is the amount of heat needed to raise 1 kilogram of water 1 degree C.)	Blackboard Chalk
	To name four good sources of protein.	Good sources of protein are foods in the milk and meat groups. What are some examples that you can think of? (Don't forget vegetable protein--kidney beans, peanut butter, soy beans, etc.)	Write protein, carbohydrate and fat on the blackboard.	
	To name four good sources of carbohydrate	Good sources of carbohydrate are foods in the bread and cereal and fruit and vegetable groups. Name some examples.		
AMERICANS TEND TO EAT TOO MANY SWEETS; THEREFORE, WE SHOULD TRY TO LIMIT THE AMOUNT OF HIGH-SUGAR, LOW-NUTRIENT FOODS WE EAT HIGH SUGAR INTAKE HAS BEEN ASSOCIATED WITH TOOTH DECAY, OBESITY AND, IN SOME CASES, DIABETES	To explain why sugar-laden foods are not the preferred sources of carbohydrate.	Sugary foods which are in the "other" group also supply carbohydrate. However, they usually do not contribute any other nutrients except carbohydrate. Therefore, it is more beneficial to the body to eat foods which supply other nutrients besides just carbohydrates.	Show class the comparison cards for sugary goods such as jelly, cookie and soft drinks. Compare these to other carbohydrate sources such as fruits, vegetables and breads.	Jelly, cookie and soft drink comparison cards Fruit and vegetable and bread and cereal groups comparison cards

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
			Show how many more nutrients the latter foods have in addition to carbohydrate, whereas sugary foods have few other nutrients.	
	To state four sources of fat	Good sources of fats are foods in the "other" group. What sources of fats can you think of? (mayonnaise, butter, bacon, salad dressing; there is also some fat in meat, cheese, whole milk, eggs, etc.)		
WE GET TOO MUCH FAT IN THE FOODS WE EAT. THEREFORE, WE SHOULD BE CAREFUL NOT TO EAT TOO MANY SERVINGS OF FOODS FROM THE "OTHER" GROUP HIGH FAT INTAKE HAS BEEN ASSOCIATED WITH HEART DISEASE FATS ARE VERY HIGH IN CALORIES	To explain why we do not need to depend upon getting the fat our body needs from the "other" group	These foods which are mainly fat are in the "other" group because, although we need fat in our diet, Americans usually eat too much fat. Since we get fats in the meat we eat and milk we drink, we don't have to make a special effort to include fats such as butter or bacon in our diet. They are very high in calories, too!		
	To state that water is a nutrient found in all foods	Water is found in all foods.		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To state how often protein, carbohydrate and fat should be eaten	Protein, carbohydrate and fat should be eaten every day.		
		Word Scramble Skilldrill B-a which will reinforce the sources of the major nutrients.	Divide class into TGT teams and have them do the Word Scramble Skilldrill B-a. Peer tutoring should be encouraged.	Word Scramble Skilldrill B-a Pencils

WORD SCRAMBLE SKILLDRILL B-a

Beside each food listed below, write down the nutrients (protein, carbohydrate, fat, Vitamin A, Vitamin C, calcium and iron) which are found in large amounts in that food. Then, look under that nutrient category (on the next pages) to find the food which has been scrambled. The letter which is underlined is the first letter of the food. Some foods may be on more than one list.

BROCCOLI

DRY PEAS

COLLARD GREENS

POTATO

LIVER

ENRICHED CEREALS

GRAPEFRUIT

MEAT

BUTTER

COTTAGE CHEESE

CEREAL

OILS

MAYONNAISE

SALAD DRESSING

ORANGE JUICE

APRICOTS

WHOLE GRAINS

STRAWBERRY

YOGURT

CHEESE

CHICKEN

DRY BEANS

CANTALOUPE

FRUITS

MARGARINE

JELLY

SPINACH

TOMATO

MILK

CARROT

RED MEAT

ENRICHED BREAD

GREEN PEPPER

PRUNE JUICE

FISH

SWEET POTATO

NOODLES

BREAD

SUGAR

BACON

Unscramble the following words. The first letter of each word is underlined. Write the unscrambled word on the line next to the scrambled word.

The following foods are good sources of VITAMIN C:

CCLIORBO ______________________________

GOAREN CUIJE (2 WORDS) ____________ ______________

YSRWTRBAER _________________________

OTMTAO ______________________________

ERNEG EPREPP (2 WORDS) ____________ ______________

TOPOTA ______________________________

RGPEARUTIF ___________________________

ELCTANAUPO __________________________

The following foods are good sources of VITAMIN A:

PACTSORI __________________________

ELCTANAUPO ________________________

CCLIORBO __________________________

RCTARO ____________________________

EWSET TOPOTA (2 WORDS) ____________ ______________

CAPNISH ___________________________

LCROLDA SNEGRE (2 WORDS) __________ ______________

The following are good sources of IRON:

RPNEU UIJEC (2 WORDS) ____________ ____________

DRCHINEE RECALES (2 WORDS) ____________ ____________

VLIRE ____________

DRCHINEE RBADE (2 WORDS) ____________ ____________

EDR ATME (2 WORDS) ____________ ____________

YRD ASEP (2 WORDS) ____________ ____________

YRD AESNB (2 WORDS) ____________ ____________

HWEOL NSAGIR (2 WORDS) ____________ ____________

The following are good sources of CALCIUM:

LKMI ____________

HESECE ____________

ICROLDA SNEGRE (2 WORDS) ____________ ____________

GOYRTU ____________

TATOCEG HEESCE (2 WORDS) ____________ ____________

The following are good sources of PROTEIN:

LKMI ____________

HESECE ____________

YRD AESNB (2 WORDS) ____________ ____________

FSHI ____________

ATME ____________

KNCIHCE ____________

YRD ASEP (2 WORDS) ____________ ____________

The following are sources of CARBOHYDRATE:

SNODOEL ____________________

CIRE ____________________

RBADE ____________________

SFURIT ____________________

TOPOTA ____________________

RECALES ____________________

GURSA ____________________

YEJLL ____________________

The following are sources of FAT:

TTUBRE ____________________

GIEMRAANR ____________________

ILOS ________________

SAYMONINAE ________________

NOBCA ________________

DALAS GDESRSNI (2 WORDS) ____________ ______________

WEEK B--DAY 2

NUTRIENTS' FUNCTIONS

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
EACH NUTRIENT HAS A SPECIFIC FUNCTION IN THE BODY	To identify the functions of given nutrients	Have students complete Nutrient Functions Skilldrill B-b. The basic functions of the nutrients discussed yesterday are: Vitamin A--helps people's eyes see in the dark; Vitamin C--helps wound healing and keeps gums healthy; Calcium--builds bones and teeth; Iron--helps carry oxygen through the blood to all parts of the body; Protein--supplies energy to the body and builds and repairs tissues; Carbohydrate--supplies energy; Fat--supplies the greatest amount of energy on an equal weight basis compared to protein or carbohydrate.	Divide children into TGT teams Pass out Nutrient Functions Skilldrill B-b. Have teams use classroom nutrition resources to determine which nutrient performs which function. Discuss correct answers with class and drill them on the information. Correct answers to nutrient functions: 1. Vitamin C 2. Protein 3. Calcium 4. Carbohydrate 5. Fat 6. Iron 7. Vitamin A	Nutrient Functions Skilldrill B-b Basic nutrition references--check with the school librarian or see student reference list at end of curriculum
			Compare one chicken bone which has been soaked in vinegar (which removes the calcium and allows the bone to bend) to a chicken bone which has not been exposed to vinegar to show that calcium makes bones (and teeth) strong and sturdy. Discuss that when you grow, your bones are growing; therefore, you would need more calcium and protein which both help build strong bones and bodies.	One chicken bone soaked in vinegar for 1 week One chicken bone which hasn't been exposed to vinegar

NUTRIENT FUNCTIONS SKILLDRILL B-b

All nutrients have specific functions in the body. Here are some of the functions which they perform. Using the reference materials in the classroom, match the nutrients with their function.

Which nutrient:

1. helps heal wounds and keeps gums healthy? ____________________
2. supplies energy to the body and builds and repairs tissues? ____________________
3. builds bones and teeth? ____________________
4. supplies energy? ____________________
5. supplies the greatest amount of energy on an equal weight basis compared to protein or carbohydrate? ____________________
6. helps carry oxygen through the blood to all parts of the body? ____________________
7. helps people see in the dark? ____________________

CHOOSE FROM THESE NUTRIENTS:

Protein

Carbohydrate

Fat

Vitamin A

Vitamin C

Calcium

Iron

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
EVERYONE NEEDS THE SAME NUTRIENTS, BUT THE AMOUNT OF EACH NUTRIENT NEEDED VARIES ACCORDING TO THE PERSON'S AGE, SEX, HEIGHT, ETC.	To explain that it is necessary to eat a variety of foods to obtain the nutrients which the body needs	Everyone needs a variety of foods every day to supply the nutrients needed to keep the body functioning.		
	To explain what determines which nutrients one needs and the amount of nutrients one needs	Everyone needs the same nutrients, but the amount needed by each person depends upon his/her age, sex, height, etc.		
		Nutrients work together in the body; therefore, it is important to eat a variety of foods.		
		Mystery Message Skilldrill B-c.	Divide students into TGT teams to work on this Mystery Message Skilldrill B-c together. When the teams have completely finished Skilldrill B-c, pass out The Decoder (Skilldrill B-c) and let them decode the Mystery Message. The message is "Eat a Vitamin C source daily, and a Vitamin A food every other day!"	Mystery Message Skilldrill B-c Pencils

MYSTERY MESSAGE SKILLDRILL B-c

Underline the food which is the better source of the nutrient below. Write the number NEXT to the food you underlined in the space at the right edge of the paper. These numbers can be decoded when you have finished this game. If you made all the correct choices, the numbers can be decoded to form a message.

Which of the following is a better source of Vitamin A?

APRICOT (5)	OR	HEAD LETTUCE (2)	______
CORN (6)	OR	CARROTS (1)	______
WINTER SQUASH (20)	OR	HAMBURGER (18)	______
SPINACH (1)	OR	WHOLE MILK (24)	______
SWEET POTATO (22)	OR	PEAS (17)	______
CANTALOUPE (11)	OR	BROCCOLI (9)	______

Which of the following is a better source of Vitamin C?

ORANGES (20)	OR	APPLES (23)	______
WHITE POTATO (1)	OR	CELERY (12)	______
GREEN BEANS (5)	OR	SPINACH (13)	______
TOMATO (9)	OR	GRAPES (21)	______
CABBAGE (14)	OR	BREAD (7)	______
CHERRIES (15)	OR	STRAWBERRIES (3)	______

Which of the following is a better source of iron?

PRUNES (19)	OR	ORANGES (11)	____
CHICKEN (25)	OR	LIVER (15)	____
WHOLE WHEAT BREAD (21)	OR	WHITE ROLL (8)	____
DRY PEAS (18)	OR	GREEN PEAS (6)	____
PLAIN CEREAL (2)	OR	ENRICHED CEREAL (3)	____
PLAIN NOODLES (16)	OR	ENRICHED NOODLES (5)	____

Which of the following is a better source of calcium?

YOGURT (4)	OR	EGGS (6)	____
MILK (1)	OR	ICE CREAM (12)	____
HAMBURGER (19)	OR	CHEESE (9)	____
HEAD LETTUCE (10)	OR	MUSTARD GREENS (12)	____
COTTAGE CHEESE (25)	OR	NOODLES (7)	____
COLLARD GREENS (1)	OR	GREEN BEANS (20)	____

Which of the following is a better source of protein?

CHEESE (14)	OR	WHOLE WHEAT BREAD (18)	____
MILK (4)	OR	GRAPES (6)	____
PEAS (21)	OR	DRY PEAS (1)	____
BUTTER (11)	OR	PEANUT BUTTER (22)	____
SPINACH (15)	OR	TURKEY (9)	____
HAM (20)	OR	GRAPEFRUIT (5)	____

Which of the following is a better source of carbohydrate?

MILK (20)	OR	BREAD (1)	____
FISH (10)	OR	CRACKERS (13)	____
NOODLES (9)	OR	CHICKEN (5)	____
POTATO (14)	OR	STEAK (12)	____
COTTAGE CHEESE (23)	OR	CORN (1)	____

Which is the better source of carbohydrate because it supplies other nutrients as well as carbohydrate?

APPLES (6)	OR	CANDY (19)	____

Which of the following is a better source of fat?

BUTTER (15)	OR	GREEN PEPPER (11)	____
CELERY (2)	OR	OIL (15)	____
SALAD DRESSING (4)	OR	MUFFIN (14)	____
CAULIFLOWER (20)	OR	BACON (5)	____
WATERMELON (19)	OR	MARGARINE (22)	____
LEAN MEAT (13)	OR	MAYONNAISE (5)	____

Which food group is a better source of iron?

MEAT (18)	OR	FRUIT AND VEGETABLE (9)	____
MILK (7)	OR	BREAD AND CEREAL (25)	____

Which of the following is a better source of calcium?

MILK (15) OR MEAT (12) ____

MILK (20) OR FRUIT AND VEGETABLE (11) ____

Which food group is a better source of carbohydrate?

BREAD AND CEREAL (8) OR MEAT (16) ____

MEAT (17) OR FRUIT AND VEGETABLE (5) ____

Which food group is a better source of protein?

MEAT (18) OR FRUIT AND VEGETABLE (4) ____

BREAD AND CEREAL (13) OR MILK (4) ____

Which food group is a better source of fats?

BREAD AND CEREAL (3) OR OTHER (1) ____

OTHER (25) OR FRUIT AND VEGETABLE (2) ____

MATCH THE NUTRIENT AND ITS FUNCTION:

1. Carbohydrate	a. Builds bones and teeth
2. Vitamin A	b. Supplies energy
3. Fat	c. Found in the blood and helps take oxygen throughout the body
4. Vitamin C	d. Helps you see in the dark
5. Protein	e. Helps heal wounds and keeps gums healthy

MATCH THE NUTRIENT AND ITS FUNCTION: (continued)

6. Calcium

7. Iron

f. Builds and repairs tissues and supplies energy

g. Supplies a large amount of energy in a small amount of food

THE DECODER

Substitute a letter for each of the numbers on the right hand side of the pages according to this code. The letters should spell a message. If they don't, go back and see what letters do not fit--choose the other food and see if that letter will help complete the message.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	B	C	D	E	F	G	H	I	J	K	L	M	N

15	16	17	18	19	20	21	22	23	24	25	26
O	P	Q	R	S	T	U	V	W	X	Y	Z

MESSAGE:

_ _ _   _   _ _ _ _ _ _ _   _   _ _ _ _ _ _   _ _ _ _ _

_ _ _   _   _ _ _ _ _ _ _   _   _ _ _ _   _ _ _ _ _

_ _ _!

ANSWERS TO MATCHING NUTRIENT AND ITS FUNCTION:

1. b
2. d
3. g
4. e
5. f
6. a
7. c

125

WEEK B--DAY 3

Baking Bread

Follow the bread recipe, page , and make the bread in class. Discuss questions and concepts which appear after the recipe section.

While bread is rising and baking, you may want the children to draw pictures depicting the functions of various nutrients, or have them classify their favorite foods into the food groups.

OR

You may want to show the film "Mulligan Stew: Look Inside Yourself," available at the National Agricultural Library Food and Nutrition Center in Beltsville, Maryland. It is a 30-minute film in which a children's rock group, the "Mulligan Stew," discusses digestion, the four food groups and the importance of breakfast.

LET US MAKE BREAD - THE GREAT CREATION*

OBJECTIVE: The children will make flour into bread.

MATERIALS:

Whole wheat flour - 3 cups
Enriched white flour - 3 cups
Milk - 1 cup
Yeast - 1 package
Brown sugar or molasses - ¼ cup
Salt - 2 teaspoons
Boiling water - ½ cup

Large mixing bowl
Measuring spoons and cups
Wooden spoon
Saucepan
Cup
Medium mixing bowl
Baking sheet
Tube pan, round with hole in center

PROCEDURE:

1. Have the children wash their hands very carefully.

2. Use the numbers and quantities for math concepts.
   Put into mixing bowl:
   1 package of yeast
   ½ cup lukewarm water
   Let stand for 5 minutes

3. Put in a separate bowl:
   1 cup milk
   ½ cup boiling water
   ¼ cup molasses or sugar
   2 teaspoons salt

4. Mix well, cool to lukewarm.

5. Add yeast to mixture.

6. Stir in:
   3 cups flour, stir with heavy spoon or mix with hands.
   [Add additional flour to make dough of kneadable consistency.]

7. Knead until smooth.

8. Let rise to double bulk (about 1 hour).

9. Shape into loaves, rolls or imaginative shapes.

10. Try making a face, an animal, masks or special designs with dough.

11. You may want the children to make foil flags with their names and stick them into their masterpieces with toothpicks before they go into the oven. Shapes change on rising and baking. Do you like the fragrance of bread baking?

12. For a grand celebration, have the children oil a tube pan. Have each child shape the dough in round balls the size of walnuts. Fill the tube pan two-thirds full with the balls. Proceed as for bread. Save this loaf for the grand celebration.

NOTE: For a sweeter bread, dip balls into melted margarine, then roll in a mixture of brown sugar, cinnamon and chopped nuts. Place balls in pan.

13. Decorate with seeds, nuts or dried fruits.

14. Place in greased tins.

15. Let rise to double in bulk (about 50 minutes).

16. Bake loaves about 50 minutes, rolls about 20-30 minutes at 375°F.

17. Encourage children to participate in every step.

18. How does the batter, dough and bread, look, feel, smell and taste?

19. Is it fun to make a loaf of bread?

20. What are your favorite shapes?

21. Why is wheat called the staff of life?
Whole grains are important to our diet because they have:

    A. Many B vitamins which are important

        1) for being alert,
        2) for steady nerves and
        3) for a good appetite.

    B. Minerals like iron to make our blood work better.

    C. Fiber to keep us regular and prevent constipation.

    D. Protein which helps build and repair our bodies.

22. What happens as the bread bakes? The yeast is killed by the heat. The liquid in the bread is converted to steam and expands the gluten, raising the bread.

23. Remove the bread from the pan and cool on a rack. Encourage each child to admire, take pride in his or her creation. Have the children talk about how the bread looks, feels and smells, and compare the bread with the dough.

24. Taste and see how good homemade bread is. How does it sound when the child bites into the crusty, chewy crust? How does this differ from store-bought bread?

REFRIGERATOR DOUGH:

Almost any yeast dough or batter may be refrigerated.
Double the amount of yeast if the dough is to be refrigerated.
A satisfactory refrigerator temperature is 45° to 50°F.
The dough will keep about 3 or 4 days.
The dough should be put in the refrigerator immediately after kneading or mixing, or after it rises and is then punched down.
Oil the surface well and cover with a clean cloth or bowl.
When the dough is removed from the refrigerator, shape it or let it stand until it reaches room temperature.
This takes about 2-1/2 to 3 hours.

Remember:

1. Dough may be prepared one day and shaped and baked up to 4 days later.
2. Double the yeast if dough is to be refrigerated.
3. Dough may be refrigerated after kneading or after rising. If allowed to rise, it would need to be punched down.
4. Oil well and cover with a clean cloth or bowl.
5. When the dough is removed from the refrigerator, it may be kneaded and shaped immediately or allowed to come to room temperature (2-1/2 to 3 hours).

*Reprinted with permission from Goodwin, M. T. and G. Pollen, Creative Food Experiences for Children, Washington, D.C.: Center for Science in the Public Interest, 1974, pp. 84-86.

WEEK B--DAY 4

Team Practice Session

Worksheet B: Nutrient Sources and Functions

1. True or False? Foods are placed in their specific food groups based on the nutrients they contain.

2. True or False? Foods within one food group supply the same amount of nutrients and the same number of calories as all other foods in that food group.

3. Which one of the following is a good source of Vitamin C?
    - Broccoli
    - Milk
    - Liver

4. You feed your pet rat foods only from the "other" group for 3 weeks. Why isn't he growing properly?

    a. He is eating foods which contain mainly fat and sugar and few other nutrients.
    b. He needs a variety of foods to supply many different nutrients.
    c. Many nutrients must be there at the same time in order for them to function properly.
    d. All of the above.
    e. a and b.

5. True or False? Milk provides all the nutrients your body needs.

6. Name the only three nutrients in foods which supply energy (calories).

7. True or False? All vegetables are a good source of Vitamin A.

8. Which of the following is not a good source of iron?
    - Milk
    - Whole wheat bread
    - Raisins
    - Spinach

9. Which is a better source of calcium, milk or ice cream?

10. Which is a source of fat?
    - Bacon
    - Bread
    - Vegetables

11. Which nutrient does Susan need to make sure that her body will get enough oxygen from the blood?

12. If Jimmy omits food from the fruit and vegetable group, which vitamins will he be missing?

13. True or False? Since it is difficult for Americans to get enough fat in their diet, they should try to choose high fat foods from the "other" group.

14. True or False? The sugar-laden foods in the "other" group provide very few nutrients, and are high in calories.

15. Patty has eaten the recommended number of servings from all four food groups, but still needs some extra calories. Which choice below would provide her with the most nutrients?
    Milk and graham crackers
    Ice cream sundae
    Cherry soda

16. Which is a better source of iron: dry peas or green peas?

17. Which of the following is (are) a good source(s) of Vitamin A?

    a. Apricots
    b. White potatoes
    c. Spinach
    d. a and c
    e. all of the above

18. True or False? The amount of each nutrient you need never changes.

19. True or False? Milk and milk products are the only sources of calcium.

20. True or False? An enriched product is one which has some of the nutrients "added back" which were lost when the product was initially being made.

21. What should you do to make sure that the nutrients are in your body at the same time so that they can help each other function?

    a. Be sure to drink milk every time you eat.
    b. Eat a variety of foods.
    c. Choose a lot of foods from the "other" group.

22. Which source of carbohydrate supplies the most other nutrients as well?
    Fruit
    Candy
    Cake

23. Which nutrient helps you see at night?

24. Is it necessary to eat a good source of iron and calcium every day?

25. Which food would supply more energy (calories) to the body--1 oz. of a food containing only carbohydrate such as jelly or 1 oz. of a food containing only fat such as butter?

26. Candy, which supplies only _____________ (a nutrient), is not required because the body gets this nutrient from so many other foods. Fill in the blank with one of these choices:
    Fat
    Carbohydrate
    Protein
    Vitamin C

27. Which is a better source of protein: peanut butter or butter?

28. What is the BEST source of iron?

29. Which two of the following are classified as minerals?
    Carbohydrate
    Calcium
    Vitamin C
    Iron

30. Which nutrient helps build strong bones and teeth?

ANSWERS TO TEAM WORKSHEET B

1. True
2. False
3. Broccoli
4. d
5. False
6. Protein, carbohydrate and fat
7. False
8. Milk
9. Milk
10. Bacon
11. Iron
12. Vitamin A and Vitamin C
13. False
14. True
15. Milk and graham crackers
16. Dry Peas
17. d
18. False
19. False (dark leafy greens, such as collards are also good sources)
20. True
21. Eat a variety of foods (b)
22. Fruit
23. Vitamin A
24. Yes
25. Butter (fat supplies the most energy)
26. Carbohydrate
27. Peanut butter
28. Liver
29. Calcium and iron
30. Calcium

WEEK B--DAY 5

TOURNAMENT

GAME B ANSWER SHEET

NUTRIENT SOURCES AND FUNCTIONS

OBJECTIVES: To state the relationship between eating a nutritious diet and growth and health.

To identify food sources of major nutrients.

To identify the functions of major nutrients.

ANSWERS

B-1 Milk and meat

B-2 Fruit

B-3 Bacon

B-4 Vitamin C

B-5 False--only protein, carbohydrate and fat can give you energy

B-6 Vitamin A

B-7 Vitamin A

B-8 Bread and cereal group

B-9 Carbohydrate

B-10 Broccoli

B-11 Fruit and vegetable group

B-12 Iron

B-13 Calcium

B-14 Supplies energy (calories)

B-15 Meat group

B-16 "Other" group

B-17 Protein, carbohydrate and fat

B-18 Apricots

B-19 Orange

B-20 Dry peas

B-21 Milk

B-22 Peanut butter

B-23 Vitamin A

B-24 Yes

B-25 Yes

B-26 Liver

B-27 Vitamin A and Vitamin C

B-28 No

B-29 Protein

B-30 Butter (contains fat)

GAME B: NUTRIENT SOURCES AND FUNCTIONS

The best sources of protein are:
- milk and meat
- fruits and vegetables
- breads and cereals
- butter and oils

B-1

Which source of carbohydrate supplies the most other nutrients as well?
- fruit
- candy
- cake

B-2

Which is a source of fat?
- bacon
- bread
- vegetables

B-3

Which nutrient helps heal wounds and keeps gums healthy?

B-4

True or False? Taking vitamin pills will give you energy.

B-5

Which nutrient helps people see at night?

B-6

Which nutrient can be stored by the body, and therefore only needs to be eaten every other day?

B-7

Which food group is a better source of iron: milk group or bread and cereal group?

B-8

Candy, which supplies only ___________ (a nutrient), is not required because the body gets this nutrient from so many other foods. Fill in the blank with one of these choices: fat carbohydrate protein vitamin C B-9	Which nutrient helps build strong bones and teeth? B-13
Which one of the following is a good source of vitamin C? broccoli milk liver B-10	What is the function of carbohydrate in the body? B-14
Which food group is a better source of carbohydrate: fruit and vegetable group or meat group? B-11	Which food group is a better source of protein: meat group or fruit and vegetable group? B-15
What nutrient does Susan need to make sure that her body will get enough oxygen from the blood? B-12	Which food group is a better source of fats: "other" group or bread and cereal group? B-16

Name the only three nutrients in foods which supply energy (calories).

B-17

Which is a better source of Vitamin A: apricots or head lettuce?

B-18

Which is a better source of Vitamin C: orange or apple?

B-19

Which is a better source of iron: dry peas or green peas?

B-20

Which is a better source of calcium: milk or ice cream?

B-21

Which is a better source of protein: peanut butter or butter?

B-22

Dark, leafy green vegetables and deep yellow fruits and vegetables are usually good sources of which vitamin?

B-23

Is it necessary to eat a good source of Vitamin C every day?

B-24

Is it necessary to eat a good source of iron and calcium every day?

B-25

What is the BEST source of iron?

B-26

If Jimmy omits foods from the fruit and vegetable group, name two vitamins which may be missing in his diet.

B-27

Sandy now knows how important it is to eat a wide variety of foods to help her grow and be healthy. Is it too late for her to begin to benefit from eating a well-balanced diet according to the Basic 4 food plan?

B-28

Which nutrient supplies energy and helps build and repair body tissues?

B-29

Which food would supply more energy (calories) to the body--1 oz. of a food containing only carbohydrate such as jelly or 1 oz. of a food containing only fat such as butter?

B-30

TGT NUTRITION UNIT--DAY 1
WEEK C

WHY SOME SNACKS ARE BETTER THAN OTHERS

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
THERE ARE MANY REASONS WHY WE CHOOSE THE FOODS THAT WE DO	To list and rank factors that affect his/her food choices	Now that you know what nutrients your body needs and how to get them, let's talk about HOW you CHOOSE what you eat!		
		Why Do You Eat the Foods That You Do? Skilldrill C-a.	Why Do You Eat the Foods That You Do? Skilldrill C-a should be passed out to each student and completed individually.	Idea adapted from the National Dairy Council "Food, Your Choice Activity" Pencils Why Do You Eat the Foods That You Do? Skilldrill C-a
		Discuss answers.	Discuss the answers with the whole class.	
		Many of you probably eat what the rest of the family does for dinner, but when are the times during the day when you alone choose what you'll eat?		
CHILDREN DO HAVE SOME CONTROL OVER WHAT FOODS THEY CONSUME	To state times of the day when he/she chooses what foods to eat	How many of you make your own breakfast or request what you would like? How many choose what they'll eat for lunch here? How many choose their own snacks?		
SNACKS ARE AN IMPORTANT SOURCE OF NUTRIENTS, ESPECIALLY DURING THE GROWTH YEARS	To explain the importance of choosing nutritious snacks which will contribute to the daily nutrient needs of the body	Snacks are a very important source of nutrients which our body needs. Choosing nutritious snacks can supply the body with these nutrients.	Point out poster--"Your Snacks: Chance or Choice?"	Poster--"Your Snacks: Chance or Choice," National Dairy Council

SKILLDRILL C-a

WHY DO YOU EAT THE FOODS THAT YOU DO?

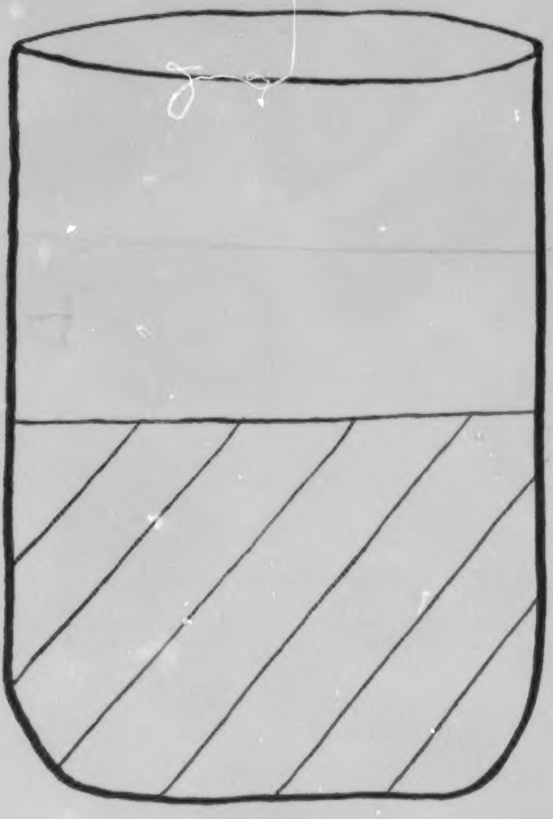
People eat what they do for a variety of reasons. Below are listed some of the reasons why people eat the foods that they do. Number the reasons (on the lines to the right) according to why you choose to eat the foods that you do. Number 1 will be the most important reason you eat as you do, and number 10 will be the least important reasons that you eat the way you do. Feel free to add other reasons if you think of them.

WHAT DETERMINES THE FOODS THAT YOU EAT?	RANK ACCORDING TO IMPORTANCE:
How the food looks	
How the food tastes	
What your friends eat	
Ads that you saw for foods on television	
How attractive the food package is	
The nutritive value of the food	
What is served at home	
How sweet the product is	
How easy the food is for you to prepare	
How crunchy the food is	

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
EACH INDIVIDUAL SHOULD TAKE THE RESPONSIBILITY OF MAKING HIS/HER OWN WISE FOOD CHOICES	To make nutritional and "orally safe" snack choices	Most of you agree that you take responsibility for choosing your own snacks. What are some of your favorite snacks? Many of these snacks taste sweet--why? (Manufacturer has added a lot of sugar to them.) Do you think that an apple, orange, bread and milk have sugar added to them? (No, the sugar in these foods is natural sugar --it has not been added by the manufacturer.) Which do you think contains more sugar--Coke or orange juice? (Coke--and all the sugar has been added by the manufacturer.)		
		Show how much sugar is in Coke, orange juice, milk, candy, cookie, gelatin and apple.	Make transparencies of T-1 through T-7 with a thermofax machine and show an overhead to compare the percentage of sugar in given amounts of: Coke, orange juice, milk, candy, cookies, gelatin and apple.	Transparencies to be made from T-1, T-2, T-3, T-4, T-5, T-6 and T-7 (on the following pages), adapted from information supplied by USDA. Thermofax machine to make transparencies from these carbon stencils Overhead projector

T-1

250 mL (8 oz.) COKE

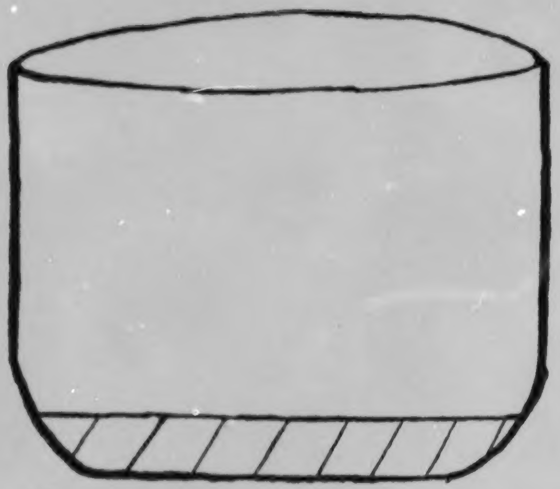


ADDED SUGAR ▨ = 45 %

Adapted from information supplied by USDA

T-2

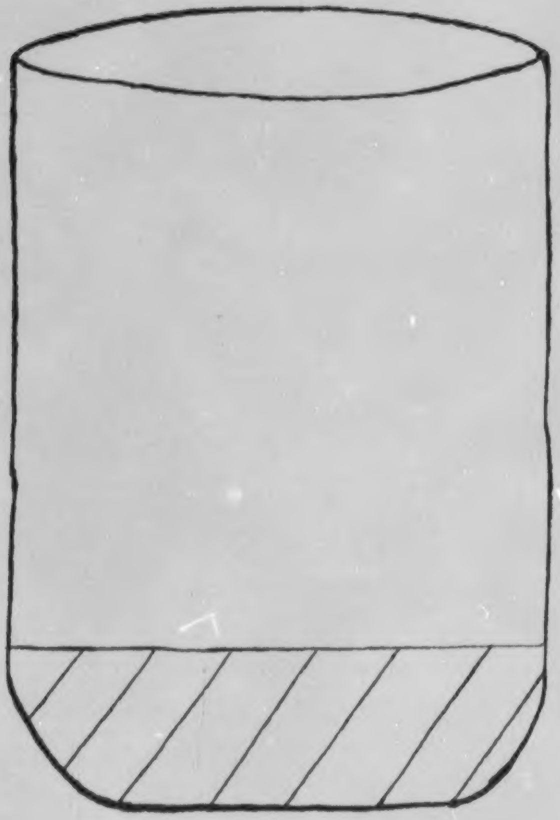
125 mL (4 oz.) ORANGE JUICE



NATURAL SUGAR ▨ = 5%

T - 3

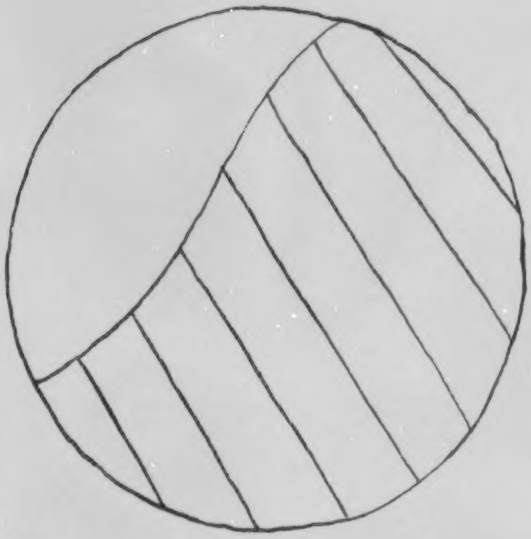
250 mL (8 oz.) MILK



NATURAL SUGAR ▨ = 16 %

T-4

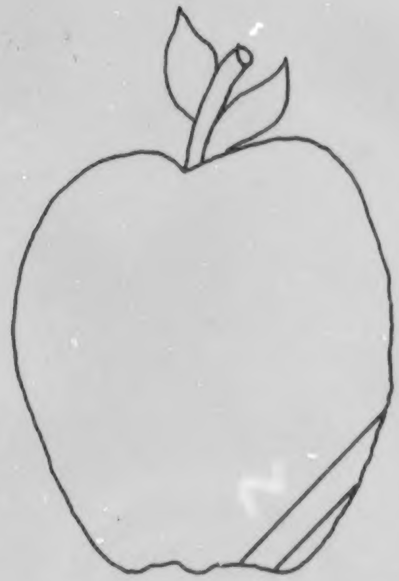
1 SUGAR COOKIE



ADDED SUGAR ▨ = 66 %

T-5

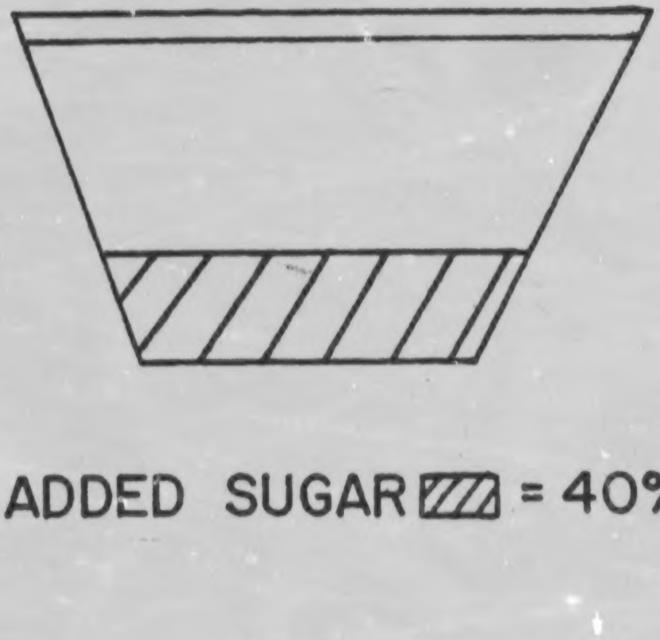
1 APPLE



NATURAL SUGAR ▨ =10%

T - 6

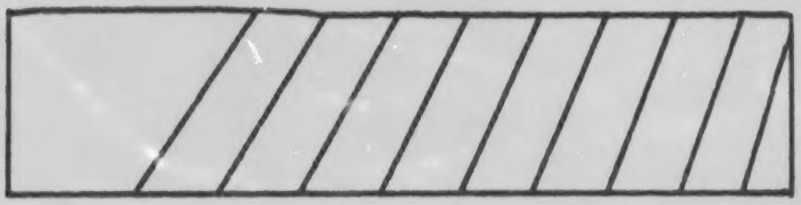
125 mL (4 oz.) JELLO (GELATIN)



ADDED SUGAR ▨ = 40%

T- 7

165 gm (5.5 oz.) CANDY BAR



ADDED SUGAR ▨ = 60 %

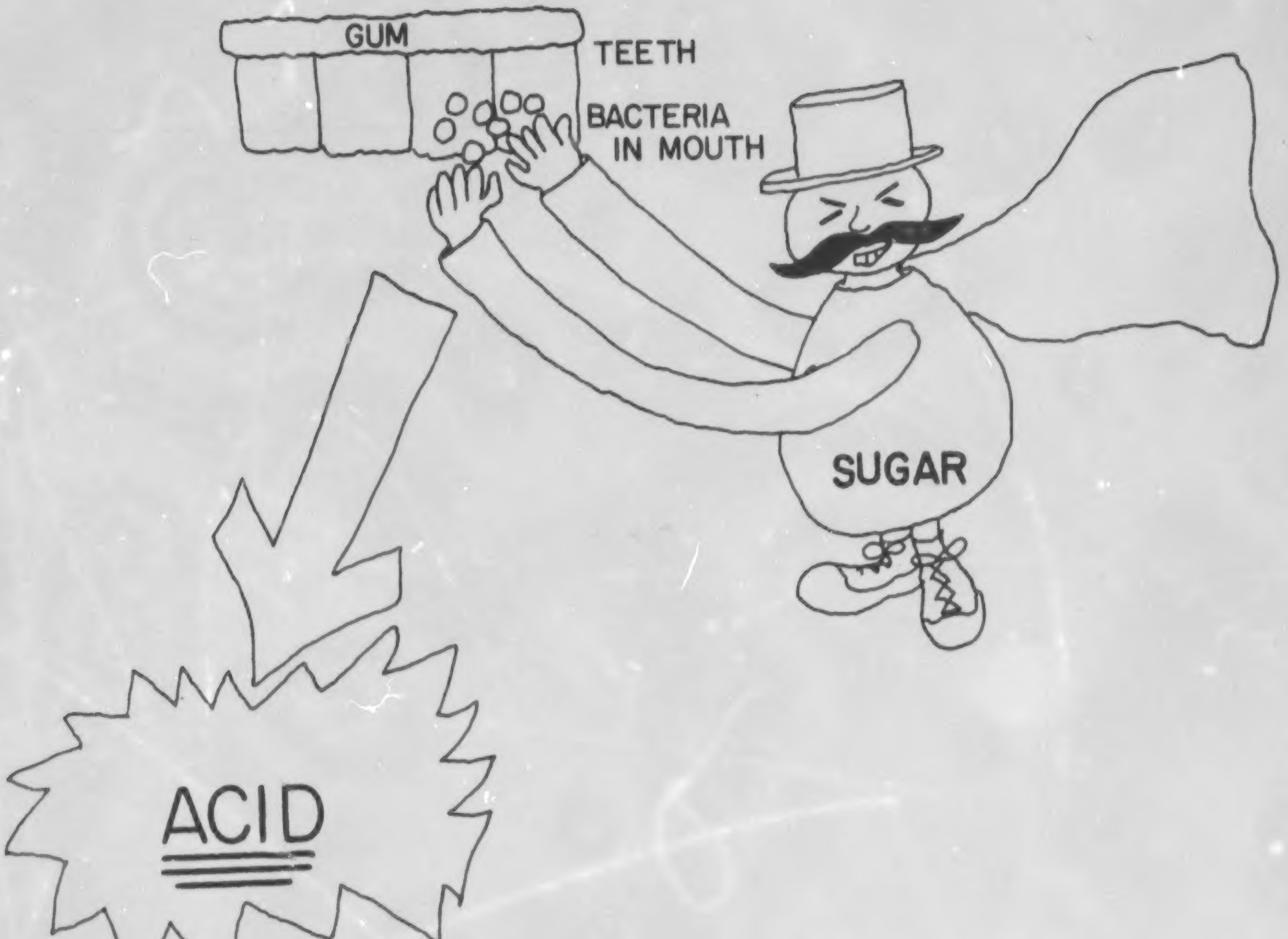
CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Therefore, the foods which taste very sweet have more sugar in them than foods which don't taste as sweet.	Point out the amount of sugar in each food, and note that sweet foods that have sugar added by the manufacturer contain much more sugar than foods which contain only their own "natural" sugar.	
		We eat 2/3 c. sugar per person per day! (Show 2/3 c.) Does this seem like a lot? It is! Remember--sugar is often "hidden" in many things like soda, ice cream, candy, cake, cookies, jelly, syrup, etc. Even many breakfast cereals are mostly sugar. (Sugar Smacks, Sugar Pops, Cooky Crisp, Frosted Flakes)	Show them 2/3 c. sugar, and point out that this is the amount of sugar eaten per day by each person in the room.	2/3 c. sugar Measuring cup Paper to put sugar on
		Show nutrient comparison cards. What do you notice about the high sugar foods? (They have few other nutrients besides sugar.)	Show nutrient comparison cards of various foods. Show class the differences in nutrients in the foods.	Dairy Council nutrient comparison cards: Cookie Orange juice Soft drink Milk Jelly Bread Carrots Yogurt
FOODS WHICH HAVE A HIGH SUGAR CONTENT OFTEN HAVE FEW NUTRIENTS BESIDES CARBOHYDRATE, MAY CAUSE WEIGHT GAIN IF EATEN TO EXCESS, MAY BE EATEN INSTEAD OF NUTRITIOUS FOODS AND MAY PROMOTE DENTAL CARIES	List three reasons for avoiding foods containing a lot of sugar	What about the foods which don't have added sugar and are not high in sugar content? (They have many other nutrients.)		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Why else should we avoid eating a lot of foods which are high in sugar content?	Class discussion	
		(If we eat too many sweets, this may decrease appetite for nutritious foods, may lead to overweight if we take in more sweets than the body can use, and may cause dental caries or cavities.)		
		Sugar may also be related to coronary heart disease and diabetes. Since Americans unknowingly consume 2/3 c. sugar every day, how could we try to decrease our sugar intake to help us stay healthy? (We could try to reduce the amount of foods we eat that we know contain a lot of sugar such as sweets and presweetened cereals and regular white or brown sugar.)		
		Do you think it is important to decrease your sugar consumption?		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
BACTERIA IN THE MOUTH JOIN WITH SUGAR FROM FOOD TO PRODUCE ACID WHICH MAY DAMAGE THE TOOTH ENAMEL AND CAUSE DENTAL CARIES	To explain the relationship between eating foods containing a lot of sugar and the development of dental caries	Film--"Trigger Foods"--American Dental Association.	Show film--"Trigger Foods"--7 Minutes. This film shows the relationship between some carbohydrates and tooth decay and the importance of choosing snacks wisely.	Film "Trigger Foods" (DHA-121) American Dental Association Patient Counseling Film Library--$5 rental fee. 16mm Film projector
		Transparencies showing the caries process.	Make transparencies from T-8 and T-9 and use them to review the decay process.	Overhead projector Transparencies to be made from T-8 and T-9 (on the following pages) Thermofax machine
		Bacteria in the mouth mix with sugar in food and produce an acid substance.		
		What do you think acid does to your teeth?		
		Show eggshell and coke--sugar in coke helps produce acid that eats through the shell (teeth) producing a hole (cavity).	Show class how coke eats through an eggshell--ask them what it may do to their teeth.	Eggshell and coke Jar (Idea from "Toothtown, U.S.A."--National Dairy Council)
		How many of you have cavities or fillings?		
		Which do you think would be more likely to cause cavities in your teeth by this process--foods with a lot of added sugar like candy that sticks to the teeth or foods with no added sugar like fruits and vegetables? (Foods with added sugar--because of the high sugar		

T-8

HOW CAVITIES ARE FORMED

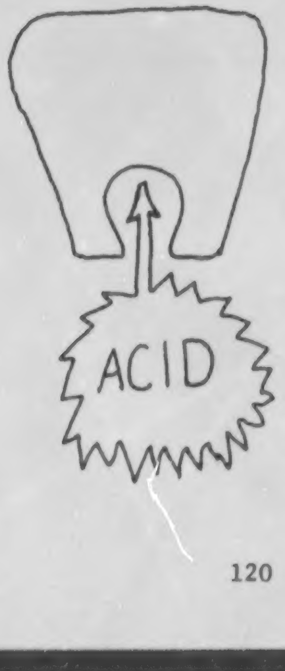


T- 9

THE DECAY PROCESS

BACTERIA IN MOUTH + SUGAR IN FOOD →

ACID IN MOUTH → CAVITIES (HOLES) IN TEETH



CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		content and because they stick to the teeth more.)		
STICKY, SUGARY FOODS ADHERE TO THE TEETH AND THUS ALLOW BACTERIA TO WORK ON THE SUGAR FOR A LONGER PERIOD OF TIME	To state three sticky, sugary foods which should be avoided for good oral health	Taste activity-- Caramel Apple Jam Raisins Eat a caramel and raisins and rub your tongue over your teeth--does it feel smooth or sticky? (Sticky) Note how it sticks to the teeth allowing the bacteria time to produce acid and start to make a cavity. Raisins are nutritious (a good source of iron), but they stick to your teeth, and may promote decay. Therefore, when you eat raisins, eat foods which help clean the teeth, like raw fruits and vegetables or water with them. Eat an apple wedge--do your teeth feel smooth or sticky? (Smooth and refreshed)	Have class perform taste tests with caramels, raisins and an apple wedge.	Idea from "Nutrition Power" by Pearl Fessler and Donna Gottlieb for the Martha Blois Fund for Applied Nutrition Caramel candy Apples Jam Raisins Knives

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Foods without sugar added to them like fruits and vegetables help clean and protect the teeth--they are called "detersive" foods because they help clean the teeth.		
DETERSIVE FOODS DO NOT STICK TO THE TEETH AND ARE LOW IN SUGAR CONTENT SO THEY DO NOT CAUSE A LARGE AMOUNT OF ACID TO BE PRODUCED	To state three "detersive" foods which help protect the teeth	Can you name some other detersive foods? (carrots, celery, pumpkin seeds, juices, raw fruits and vegetables)	Have the class taste examples of "detersive" foods such as sunflower and pumpkin seeds, raw cauliflower, raw broccoli.	"Detersive" foods such as pumpkin and sunflower seeds, raw cauliflower and broccoli
		Put a knife in jam--does the knife appear smooth or sticky? (Sticky)	Compare the knife to their teeth to emphasize how sticky foods may promote tooth decay.	
		Put a knife in apple--which leaves the knife clean? (Apple)		
		What do you think these foods would do to your teeth?		
		Which do you think would be good snacks?	Discuss the snack posters which are posted on the classroom wall with the class.	Poster--"Your Snacks--Choice or Chance?" "OK Snacks and Snacks to Avoid"--both posters from National Dairy Council

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To distinguish between nutritious, orally-safe snacks and less nutritious snacks. To name nutritious snacks which can be eaten.	In TGT teams, do the Choose the Better Snacks Skilldrill C-b.	Divide the class into TGT teams and pass out Choose the Better Snacks Skilldrill C-b, which they should complete. Then discuss the snack alternatives. Answers to Skilldrill C-b: 1. B 6. A 2. B 7. A 3. A 8. B 4. B 9. A 5. A 10. B (contains less sugar than jelly).	Choose the Better Snacks Skilldrill C-b Pencils

SKILLDRILL C-b
CHOOSE THE BETTER SNACKS

We discussed nutritious and decay-preventing snacks in class today. Those snacks are ones which are low in sugar content, provide many nutrients, do not stick to the teeth and thus do not promote dental cavities. Check the more nutritious snack in either column A or B below.

	A	B
1.	______ Caramel candy	______ Pumpkin seeds
2.	______ Gelatin	______ Raw cauliflower
3.	______ Popcorn	______ Sugar-coated cereals
4.	______ Marshmallows	______ Cheese
5.	______ Orange juice	______ Soda
6.	______ Peanuts	______ Lollipops
7.	______ Sunflower seeds	______ M & M's
8.	______ Cake	______ Pizza
9.	______ Crackers	______ Cookies
10.	______ Jelly	______ Peanut butter

WEEK C--DAY 2

READING LABELS CAN AID IN MAKING WISE FOOD CHOICES

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
EACH INDIVIDUAL SHOULD TAKE THE RESPONSIBILITY OF MAKING HIS/HER OWN WISE FOOD CHOICES		Last time we talked about various factors affecting what foods you choose to eat.		
		We found that it was YOUR responsibility and YOUR choice to eat the foods which supply the nutrients your body needs (such as snacks which contain nutrients and do not have a lot of added sugar).	Class discussion.	
		How many of you watch TV commercials?		
		What are some of your favorite cereals? Why?		
FOOD CHOICES MAY BE SKILLFULLY MANIPULATED BY FOOD ADVERTISERS		How many of you have asked for products you've seen on TV? Give examples.		
		How do the commercials make you want these products? (The ads say the product is FUN to eat, it's sweet, a lot of kids on the ad were eating it--peer pressure, prizes in the box.)		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To identify tricks used by advertisers to make children desire their products	This film, "Sooper Goop," will show you some tricks the advertiser uses to get you to buy his product. See what tricks you can find. Also notice that when the amount of sugar in the product increases, the nutrients in the product decrease.	Film--"Sooper Goop"--13 minutes. The children should question their buying habits as a result of this film and realize that they are being "used" and victimized by the advertisers. They should also become aware of the high sugar content of presweetened breakfast cereals.	Film--"Sooper Goop"--Churchhill Films (USDA Library). 16mm projector
		Discuss students' reactions to film.	Class discussion	
		Have you ever bought something because it looked good on TV and then hated it?		
		Be careful--don't be fooled or brainwashed into buying something!		
		If it was a cereal, what was probably the main ingredient in that cereal? (sugar)		
		What's the main ingredient in most of the cereals you eat?		
		How can you tell what's in the food you eat? (read labels)		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		If you want to choose the food that's most nutritious, you should know what is in the food.		
THE INGREDIENTS LISTED ON FOOD LABELS ARE LISTED IN DESCENDING ORDER OF QUANTITY CONTAINED IN THE PRODUCT	To explain the significance of the ordering of ingredients on a food label	For example, look at this food label. (transparency) Look under the ingredient part of the package. The first ingredient on the label is the ingredient that is found in the largest amount in that food. The last ingredient listed is the one contained in that food in the smallest amount. (Show example on overhead.) Therefore, if sugar is the first ingredient, this means that the product contains more sugar than anything else.	Make and discuss transparency T-10 of a presweetened cereal label which has sugar as the first ingredient. Compare with T-11, a label of a nonpresweetened cereal.	Make transparency T-10 of a presweetened cereal label and T-11 of a nonpresweetened cereal. Overhead projector Thermofax machine
		In TGT teams, pass out labels, one presweetened cereal label and one regular cereal label.	Pass out labels to teams	Presweetened cereal label for each team Regular cereal label (such as shredded wheat, puffed rice, bran flakes, oatmeal, Wheaties) for each team

T-10

PRESWEETENED CEREAL LABEL

COOKIE CRISP

Sweetened Cereal

Artificial Chocolate Chip

Flavor

Ingredients: sugar, yellow corn flour, rice flour, wheat flour, oat flour, coconut oil, salt, corn syrup, artificial flavor, cocoa, cornstarch, vitamins....

T-11

NONPRESWEETENED CEREAL

SHREDDED WHEAT

Ingredients: 100% whole wheat, BHT (a preservative)

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		What ingredient is found in the largest amount in each of these foods? If sugar is first, is it really a cereal or is it more like candy?	Let each team discuss these questions and then discuss concepts with the entire class.	
	To distinguish between products which have and have not had sugar added	Which cereal has more sugar in it?		
	To identify three cereals which are not composed mainly of sugar	Which cereal has more grain in it? (ones with grain as first ingredient)		
		Which cereal would be better for the teeth?		
		Why must you read the label to make wise cereal (and other food) selections?		
		If sugar is the first or second ingredient, it is better to select another product.		
WE GET VITAMINS FROM EATING A VARIETY OF NUTRITIOUS FOODS AND THEREFORE DO NOT NEED TO GET ALL OUR VITAMINS IN ONE FOOD	To state that adding a lot of vitamins to products does not necessarily make that product a nutritious choice	Beware! Some cereals are "fortified." This means that nutrients are added to it that are not normally in that food. Just because a food is fortified, it is NOT necessarily a wise food choice. Read the label--see how much sugar is in the cereal.	Write FORTIFY on the blackboard as the definition is discussed. Look at labels with "fortified" on them (in teams).	Blackboard Chalk Labels with the word FORTIFIED on them (such as breakfast cereal boxes and fruit drinks)

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
MANUFACTURERS OFTEN ADD NUTRIENTS TO A FOOD WHICH ARE NOT NATURALLY CONTAINED IN THAT FOOD. THIS IS CALLED FORTIFICATION	To define FORTIFY	Often, a lot of vitamins are added to foods to fool you into thinking that the food is really good for you. But as we learned, you get vitamins from eating a variety of foods rather than from just one food. Cereal is not meant to be your only source of vitamins, so you do not need to eat a cereal that is "loaded" with vitamins, since they are often "loaded" with sugar, too!		
		Look at labels on orange juice, orange drink, Kool-Aid, Hi C, soda. Which has no sugar added? (orange juice)	Make and discuss transparency T-12. Look at labels of orange juice, orange drink, Kool-Aid, Hi C, soda.	Make transparency T-12 which compares the labels for orange juice, orange drink and Kool-Aid Overhead projector Thermofax machine Food labels from Hi C and soda, etc.
MANUFACTURERS ADD ARTIFICIAL CHEMICALS TO CHANGE THE COLOR AND TASTE OF CERTAIN FOOD PRODUCTS	To state the rationale behind the use of artificial colors and flavors	Which have a lot of artificial colors and flavors? "Artificial" means not a "natural" ingredient--it would not normally occur in that food; it would not be there if you made it yourself from scratch.		

T-12

WHICH IS THE BEST CHOICE?

1.) GIANT ORANGE DRINK

Ingredients: Water, sugar, corn syrup, orange solids, orange juice concentrate, flavors, malic acid, vitamin C, artificially colored.

2.) ORANGE KOOL AID

Ingredients: Citric Acid, Monocalcium phosphate, Natural and Artificial Flavors, Vitamin C, Artificial Color, BHA.

3.) ORANGE JUICE

Ingredients: 100% Orange Juice.

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		What are artificial colors and flavors used for? (Manufacturer wants to change the color and taste of the product so he adds chemicals to the product to help it sell better.)		
	To choose foods with the least amount of sugar and artificial ingredients after reading the food labels	Therefore, since artificial colorings and flavorings do not make the product better nutritionally and since they were not originally in those foods, should we avoid the use of foods which use a lot of artificial ingredients?	Class discussion Write on the blackboard that foods which have little or no sugar and artificial colors and flavors (according to the food label) should be chosen.	Blackboard Chalk
		How could we do this? (read labels)		
		When you choose foods by reading the label, look for those foods with little or no sugar and with as few artificial ingredients as possible.		
		What are some foods which are artificially colored or flavored? (soda, some cookies and cakes, some candy, Pringles potato chips, whipped toppings, etc.)	Pass out labels of foods which have artificial colors or flavors added. Pass out labels of foods which do not have artificial colors or flavors added.	Labels of foods which say "artificially colored or flavored" Labels of foods which are not artificially colored or flavored

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		What are some foods that aren't? (fresh vegetables, milk, cottage cheese, popcorn, some nuts)		
		Canned fruit is often packed in very sugary syrup--"heavy syrup." These fruits and fruits in light syrup should be avoided because of their high sugar content.		
		Instead, look for canned fruit in its own juice, or better yet, eat fresh fruit.		
		Show examples of canned fruit labels.	Pass out labels of fruit canned in its own juice and canned in syrup.	Labels of fruit canned in syrup and canned in its own juice (such as pineapple in heavy syrup and pineapple in its own juice)
		Divide into TGT teams and complete Label Hunt Skilldrill C-c.	Divide into TGT teams and complete Label Hunt Skilldrill C-c.	Label Hunt Skilldrill C-c, idea adapted from "Nutrition Power," Marcha Blois Fund Pencils

SKILLDRILL C-c
LABEL HUNT

I. Examine the food packages below and answer the questions that follow:

FROOT LOOPS

Ready-Sweetened Cereal

Fortified with 10 essential vitamins and minerals

Ingredients: sugar, corn, wheat and oat flour, hydrogenated vegetable oil, salt, artificial coloring, vitamins, flavors.

SHREDDED WHEAT

Ingredients: 100% whole wheat, BHT (preservative).

1. Which ingredient is present in the largest amount in Froot Loops cereal? ____________
2. Which cereal has more grain in it? ____________
3. Which cereal is better for the teeth? ____________
4. Which cereal has artificial coloring added? ____________
5. Must the body get most of its vitamins and minerals from cereal? ____________
6. Because a product is "fortified" with vitamins and minerals, does that necessarily make that product a wise food choice? ________
7. Which cereal is a more nutritious food choice? ____________
8. Why should the other product be avoided? (Two reasons) ________

   ____

   ____

9. True or False? In general, if a product has sugar as one of the first ingredients and has a lot of artificial chemicals added for coloring and flavoring, it is wiser to choose a more nutritious food. ________

   ____

10. What must we read to select packaged foods wisely? ____________

II. You are the detective! Read the following labels and decide whether the food in Column A or in Column B is more nutritious. Check the box next to the more nutritious product.

Clue:

Remember, if sugar is one of the first ingredients, that product contains more sugar than any other ingredient. Also, chemicals such as artificial coloring and artificial flavoring should be avoided when possible.

	A	B
1.	JELL-O GELATIN DESSERT Cherry Flavor Ingredients: sugar, gelatin, Adipic Acid, Disodium Phosphate, Fumaric Acid, artificial color, artificial flavor. ☐	DANNON VANILLA LOWFAT YOGURT Ingredients: cultured, pasturized lowfat milk, sugar, 4% nonfat milk solids, natural vanilla. ☐
2.	PEACH HALVES in their own peach juice Ingredients: peaches, natural peach juice. ☐	ROYAL INSTANT PUDDING Dark 'n' Sweet Chocolate Ingredients: sugar, modified food starch, Dutch Process Cocoa, Sodium Phosphate, salt, vegetable shortening, algin, artificial color. ☐
3.	MIXED NUTS Ingredients: peanuts, cashews, walnuts, almonds, pecans, vegetable oil, salt. ☐	DUNCAN HINES DEEP CHOCOLATE DELUXE II CAKE MIX Ingredients: sugar, dextrose, enriched flour, vegetable shortening, cocoa, Propylene Glycol Monoesters, iodized salt, modified food starch, vegetable gum, soy protein isolate, dried whey solids, artificial flavoring, artificial coloring. ☐

	A	B
4.	TOOTSIE ROLL POPS Ingredients: sugar, corn syrup, partially saturated soy or coconut oil, cocoa, condensed skim milk, whey citric acid, salt, vegetable lecithin, artificial and natural flavors, artificial color. ☐	DRY ROASTED SUNFLOWER SEEDS Ingredients: shelled sunflower seeds, vegetable oil, salt. ☐
5.	DEL MONTE UNSWEETENED ORANGE JUICE Ingredients: 100% orange juice. ☐	GIANT ORANGE DRINK Contains 10% Orange Juice Ingredients: water, sugar, and corn syrup, orange solids, orange juice concentrate, natural flavors, malic acid, vitamin C, artificially colored. ☐
6.	DRY ROASTED PUMPKIN SEEDS Ingredients: pumpkin seeds, salt. ☐	KRAFT FUDGIES Ingredients: sugar, corn syrup, hydrogenated vegetable oil, whey solids, chocolate, condensed skim milk, salt, artificial and natural flavor. ☐
7.	PINEAPPLE in Heavy Syrup Ingredients: pineapple, water, sugar. ☐	PINEAPPLE Packed in Natural Pineapple Juice No Sugar Added Ingredients: pineapple, natural pineapple juice. ☐

	A	B
8.	COOKY CRISP Sweetened Cereal Artificial Chocolate Chip Flavor Ingredients: sugar, yellow corn flour, rice flour, wheat flour, oat flour, coconut oil, salt, corn syrup, artificial flavor, cocoa, cornstarch, vitamins.... ☐	CHEERIOS Cereal Ingredients: oat flour, wheat starch, sugar, salt, calcium carbonate, sodium phosphate, sodium ascorbate, niacin, artificial color, iron, vitamins.... ☐
9.	TRISCUIT Delicious 100% wheat wafers (Crackers) Ingredients: whole wheat, vegetable oil, salt, BHA, BHT. ☐	SUNSHINE SUGAR WAFERS (Cookies) Ingredients: sugar, enriched flour, vegetable shortening, whey solids, leavening, lecithin, natural and artificial flavoring, artificial coloring. ☐
10.	AUNT NELLIE'S UNSWEETENED Grapefruit Juice Ingredients: 100% pure grapefruit juice. ☐	AUNT NELLIE'S SWEETENED Grapefruit Juice Ingredients: grapefruit juice, sugar, dextrose. ☐
11.	HOSTESS TWINKIE Ingredients: sugar, enriched flour, water, corn syrup, shortening, eggs, dextrose, leavening, skim milk, whey, modified food starch, salt, artificial flavor and artificial color. ☐	RY KRISP Whole grain rye crackers Ingredients: whole rye, vegetable oil, salt, caraway and BHA. ☐

	A	B
12.	COCA-COLA Ingredients: carbonated water, sugar, caramel color, phosphoric acid, natural flavorings, caffeine.	MILK Ingredients: milk.
13.	GIANT FROZEN ORANGE JUICE No sugar added Ingredients: 100% frozen orange juice.	GIANT FROZEN PINK LEMONADE Artificially Colored Ingredients: sugar, concentrated and pulpy lemon juice, lemon oil, artificial color.
14.	GENERAL MILLS TRIX Artificial Fruit-Flavored Frosted Corn Puffs Ingredients: degermed yellow corn meal, sugar, oat flour, corn syrup, wheat starch, salt, vitamin C, artificial colors, natural and artificial flavors, calcium carbonate, vitamins....	KELLOGG'S SPECIAL K Ingredients: rice, wheat gluten, sugar, defatted wheat germ, salt, skim milk, malt flavoring, vitamins, BHA and BHT.
15.	HAWAIIAN PUNCH Sunshine Orange ARTIFICIALLY COLORED Ingredients: water, sugar and corn syrups, fruit juices, and purees, citric acid, vitamin C, dextrin, salt, natural flavors, artificial color, maltose.	PURE APPLE JUICE Ingredients: apple juice.

ANSWERS TO "LABEL HUNT"

Part I.

1. Sugar
2. Shredded Wheat (Wheat, the grain, is the first ingredient.)
3. Shredded Wheat (It has no sugar which may lead to tooth decay.)
4. Froot Loops
5. No (Vitamins and minerals should be obtained by eating a VARIETY of foods.)
6. No (Since cereal is not intended to supply most of the vitamins and minerals to the body, a fortified product does not necessarily make a wise food choice. In this case, Froot Loops, a fortified cereal, is mostly sugar and therefore would be a poor food choice.)
7. Shredded Wheat
8. Sugar is the first ingredient, which means that there is more sugar in the cereal than any other ingredient; also, the cereal has artificial coloring.
9. True
10. Food labels

Part II. The more nutritious products are:

1. B
2. A
3. A
4. B
5. A
6. A
7. B
8. B
9. A
10. A
11. B
12. B
13. A
14. B
15. B

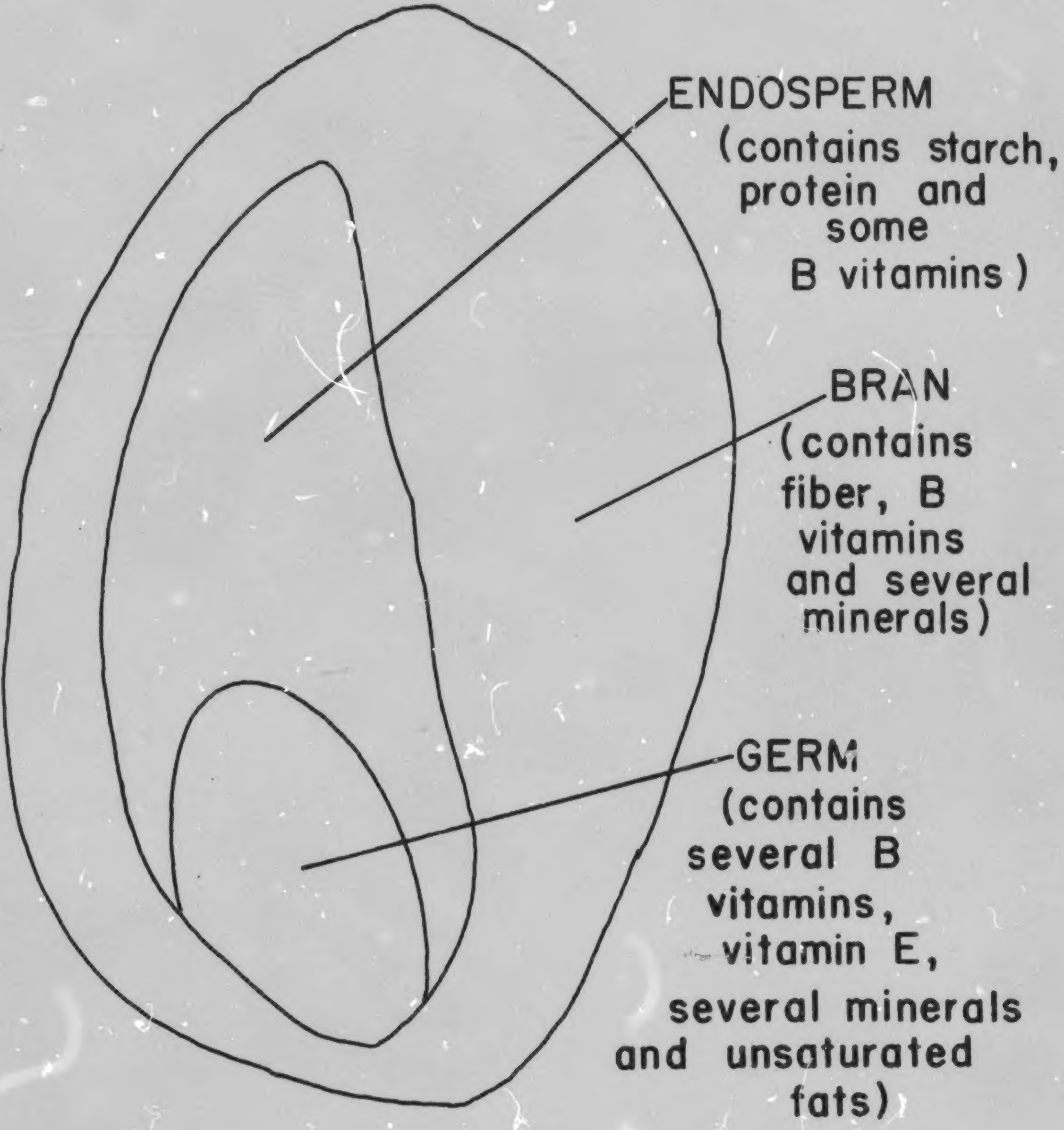
WEEK C--DAY 3

ADVANTAGES AND DISADVANTAGES OF PROCESSING

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
WHEN FOODS ARE PROCESSED, THEY ARE CHANGED FROM THEIR NATURAL STATE, WHICH MAY CAUSE SOME NUTRIENTS TO BE LOST		Another choice YOU can make about what foods you eat is whether you want foods which have been "processed" or foods which are closer to their natural state.		
	To define processing To state an advantage of processing	Processing--the manufacturer of the food does something to that food that makes it different from its natural state. For example, fresh green beans are in their natural state. Canned green beans or frozen green beans are "processed"--that is, the manufacturer performed a series of steps on the fresh green beans so that they could be canned or frozen to keep longer.	Write definition of processing on the blackboard. Ask for other examples of processed foods.	Blackboard Chalk
		Sometimes, however, when a food is processed, or changed from its original form, nutrients are lost.		
		Wheat is a good example. Show wheat stalk. This is wheat, a grain, as it looks when it is picked from the ground.	Make and discuss transparency T-13 or show the wheatstalk and then grind it (with heavy object) to show the class how flour is made.	Overhead projector Make transparency T-13 Thermofax machine Wheatstalk from a florist or from the Miller's National Federation

T-13

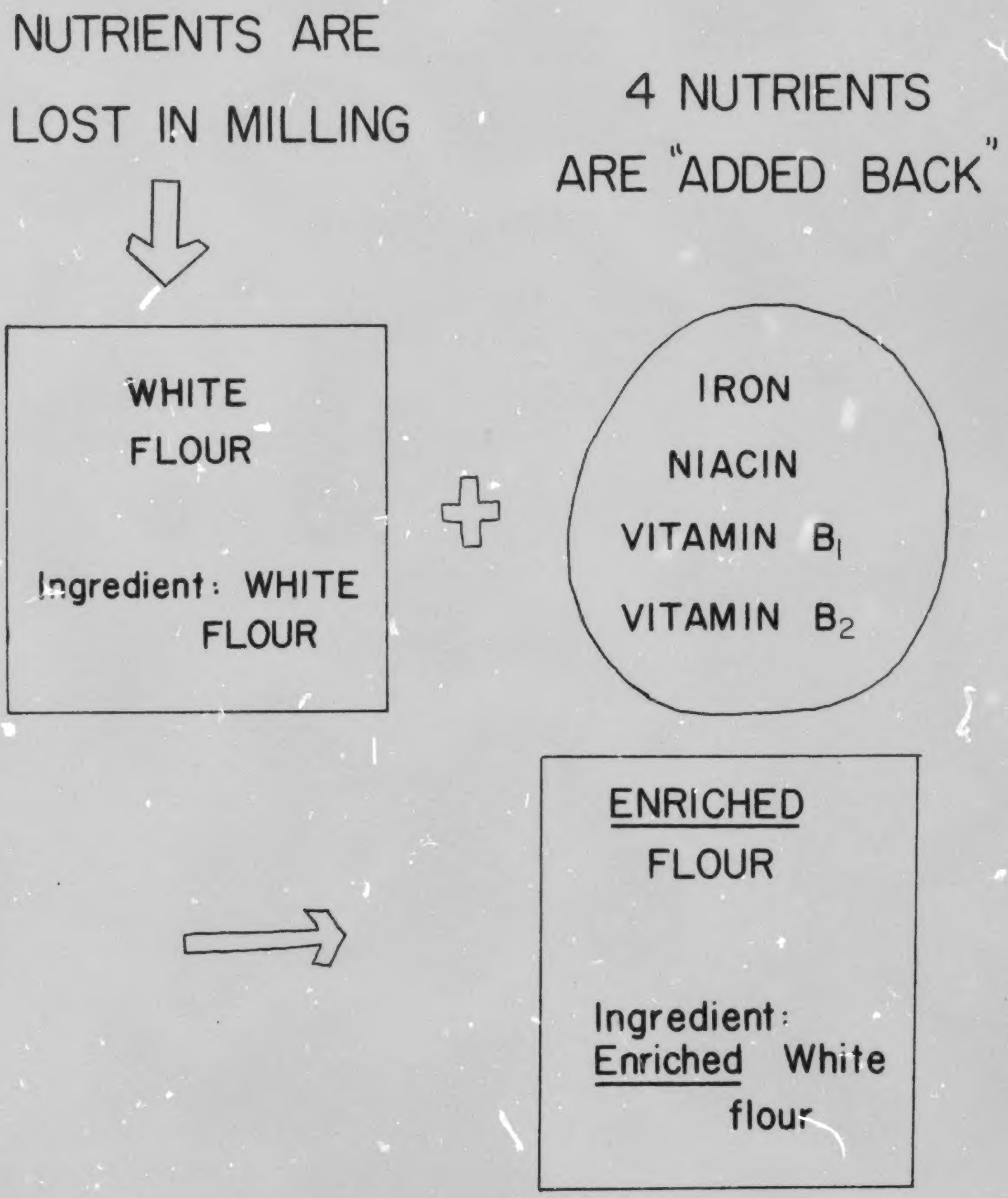
WHEAT KERNEL


ENDOSPERM
(contains starch, protein and some B vitamins)
BRAN
(contains fiber, B vitamins and several minerals)
GERM
(contains several B vitamins, vitamin E, several minerals and unsaturated fats)

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
				Grinder (heavy object) Plate
		At the mill, it is ground into flour called whole wheat flour because the whole wheat stalk is ground up to make the flour. This flour can then be used to make bread. Have you ever eaten whole wheat bread?	Show the class whole wheat flour. Show the class white flour which results when the wheat is further processed. Note color difference.	Whole wheat flour White flour
	To state a disadvantage of processing	If the manufacturer wants to make white flour from the wheat, he must remove part of the wheat stalk before he grinds the wheat. The parts he removes are called the bran and the wheat germ. Show parts [illegible] wheat poster. Unfortunately, the wheat germ and the bran have the most nutrients, and therefore these nutrients do not get into the white flour that's used to make white bread. This is a disadvantage of processing.	Show wheat poster or T-13 and describe the parts removed during processing (wheat germ and bran). Point out that wheat germ isn't really a "germ"--that's just its name. Pass out "A Kernel of Wheat" posters to class.	"A Kernel of Wheat" poster--Wheat Flour Institute Miniature "A Kernel of Wheat" posters--Wheat Flour Institute ("How Flour is Milled" is on back of poster)
		Whole wheat bread does not have the bran and germ removed, and thus has more nutrients.		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To explain that processing changes the flavor, color, texture and nutrient content of foods	Not only are some nutrients lost during processing, but the taste, smell and color are also changed. Let children sample some white bread and some whole wheat bread--discuss the fuller texture and richer flavor of whole wheat bread. Does one have a thicker, richer taste? Which has more nutrients? (whole wheat bread) Some manufacturers try to "add back" some of the nutrients that were lost during processing.	Let students sample white bread and whole wheat bread. Discuss the differences in color, flavor, texture, nutrient value and smell.	1 loaf white bread 1 loaf whole wheat bread
PROCESSED PRODUCTS MAY HAVE SOME OF THE LOST INGREDIENTS "ADDED BACK." THIS IS CALLED "ENRICHMENT." HOWEVER, NOT ALL NUTRIENTS THAT WERE ORIGINALLY IN THE PRODUCT CAN BE RETURNED	To define "enriched"	For example, some white breads may say "enriched" on the label. An enriched bread has some, but not all, of the nutrients lost in processing "added back."	Write the definition of "enriched" on the blackboard. Show transparencies T-14 and T-15 to show that enriched products differ from fortified products because enrichment "adds back" nutrients which were originally in the product; fortification adds nutrients which were never present in the original product.	Blackboard Chalk Make transparencies T-14 and T-15 which distinguish enrichment from fortification Overhead projector Thermofax machine

T-14



NUTRIENTS ARE LOST IN MILLING

4 NUTRIENTS ARE "ADDED BACK"

WHITE FLOUR

Ingredient: WHITE FLOUR

IRON

NIACIN

VITAMIN B_1

VITAMIN B_2

ENRICHED FLOUR

Ingredient: Enriched White flour

T-15

FORTIFICATION

CEREAL

"FORTIFICATION" - NUTRIENTS ARE ADDED WHICH WERE NEVER IN THE ORIGINAL PRODUCT

⇩

CEREAL
"FORTIFIED"
with 10 essential
vitamins and minerals

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Show transparencies and food labels.	Show food labels of products which say "enriched."	Food labels which say "enriched" (such as enriched flour, bread, rice, noodles, crackers)
		Another example of a whole grain product is brown rice. Show some brown rice. This is the natural state of rice.	Show difference between brown rice and white rice.	Brown rice White rice
		If a manufacturer processes the rice, he takes off the outer coat and he then gets white rice. Show white rice. However, white rice has the nutrients in the outer coat removed during processing, and they can not all be replaced even though some nutrients may be added back by enrichment. Thus, if some nutrients are added back, the rice is called "enriched rice." However, it still does not have as many nutrients as the original brown rice.		
IF A PRODUCT LOSES NUTRIENTS IN PROCESSING, AND NONE OF THEM ARE "ADDED BACK," THE PRODUCT IS A NONENRICHED PRODUCT AND CONTAINS VERY FEW OF THE ORIGINAL NUTRIENTS	To state why whole grain products are better than enriched products and nonenriched products	Which has more nutrients --brown rice or enriched rice? (brown rice)		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
	To state why enriched products are better than nonenriched products	Which has more nutrients, enriched rice or nonenriched rice? (enriched rice; the nonenriched rice has none of the nutrients lost in milling added back)		
		The "fiber" which is in whole grain products helps move food through your digestive system. Therefore, you will have less of a chance of becoming constipated if you eat whole grain products regularly.		
THERE ARE SEVERAL GRAINS BESIDES WHEAT WHICH ARE USED TO MAKE VARIOUS PRODUCTS	To name three grains	What are some other grains besides wheat and rice? (rye, corn, oats, barley, buckwheat, millet)	Write the grains on the blackboard.	Blackboard Chalk
		Name cereals or breads which contain these grains.	Have students cite examples of cereals, etc., containing these grains (Rice Chex, Wheat Chex, Rice Krispies, Special K, oatmeal, buckwheat pancakes, rye bread)	
		Use labels to help you decide if a product is whole grain (less processed), enriched or nonenriched. Show transparency.	Make transparency T-16 to show a comparison of labels of a whole grain (less processed) product, an enriched product and a nonenriched product. Note that the whole grain	Make transparency T-16 Overhead Projector Thermofax machine

T-16

LABEL COMPARISON

WHOLE GRAIN LABEL:
Ingredients: Whole Wheat Flour, White Flour, BHT....

ENRICHED LABEL:
Ingredients: Enriched White Flour, Eggs, BHT....

NONENRICHED LABEL:
Ingredients: White Flour, Wheat Flour, Water, Salt....

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
			product says "whole wheat flour" not just "wheat flour".	
		It must say "whole wheat" or "whole wheat flour" on the label to be a whole wheat product (same for all other grains). If it says just "wheat flour," it is not whole grain (same for all other grains). In this case, if it did not say "enriched wheat flour" either, it would be a nonenriched product.		
	To identify whole grain, enriched and nonenriched products by reading labels	Divide into TGT teams and read labels to decide whether the product is whole grain, enriched or nonenriched.	In TGT teams, distinguish between labels of whole grain, enriched and nonenriched products.	Labels from pasta, breads, cereals, flour, etc.
HIGHLY PROCESSED FOODS OFTEN ARE VERY HIGH IN SUGAR AND HAVE MANY NUTRIENTS REMOVED	To state that whole grain products containing little sugar are more nutritious than processed products containing a large amount of sugar	Look at presweetened cereal labels and note that they are usually not whole grain products and that sugar is often the first ingredient.	Discuss labels of presweetened cereals--point out that they are high in sugar and low in whole grains.	Labels from presweetened cereals
		Compare with a whole grain cereal label and note that sugar is not the first ingredient.	Discuss labels from whole grain cereals.	Labels from whole grain cereals (such as oatmeal, Wheatena, etc.)

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Complete the Processed vs Less-Processed Foods Skilldrill C-d.	In TGT teams, complete the Processed vs Less-Processed Foods Skilldrill C-d.	Skilldrill C-d Pencils
		Finish unit by discussing the rat experiment.	Observe the rats and discuss the experiment and its implications.	Rats
		Observe both rats--did the malnourished rat improve once he was given a nutritious diet? (hopefully-yes!)		
		What conclusions can you make about the diet's impact on health?		
		Is it ever too late to benefit from eating a nutritious diet?		
		If your diet needs to be improved, are you trying to make the appropriate changes?		

SKILLDRILL C-d
PROCESSED VS LESS-PROCESSED FOODS

Check the space next to the food in either Column A or Column B which is the least processed, more nutritious choice

Hint:

Remember that processing means anything that is done to a food such as: canning, freezing, adding sugar, adding artificial colors or flavors or milling grains. Processing changes a product from its original (natural) form. Whenever a food is processed, nutrients are usually lost or artificial chemicals are added. Thus, foods with a minimum of processing are often the best nutritional choice.

Extra Hint:

Remember that whole grain products are the least processed grain products and still have most of their nutrients. Enriched products are processed and thus have lost many nutrients, but some have been added back. Nonenriched products are the most processed grain products because they do not have any of the nutrients that are lost in processing replaced. Thus, they are the poorest nutritional choice.

	A		B	
1.	AUNT JEMIMA WHOLE WHEAT PANCAKE AND WAFFLE MIX Ingredients: whole wheat flour, enriched wheat flour, oat flour, dried molasses, soy flour, brown sugar, leavening, wheat gum, dextrose, salt, vitamins....	____	AUNT JEMIMA'S ORIGINAL PANCAKE AND WAFFLE MIX Ingredients: enriched wheat flour, corn flour, rye flour, leavening, dextrose, salt, corn syrup solids, wheat starch, artificial coloring.	____
2.	NONENRICHED EGG NOODLES Ingredients: nonenriched egg noodles.	____	MUELLER'S EGG NOODLES Enriched Ingredients: enriched egg noodles.	____
3.	SUNSHINE KRISPY SALTINE CRACKERS Ingredients: enriched flour, vegetable shortening, salt, malt, leavening, whey.	____	TRISCUIT 100% Whole Wheat Wafers Ingredients: whole wheat, vegetable oil, salt, BHA and BHT.	____
4.	UNCLE BEN'S BROWN RICE Ingredients: brown rice.	____	GIANT'S ENRICHED RICE Ingredients: enriched rice.	____

	A	B
5.	CANNED GREEN BEANS ____ Ingredients: green beans, salt, water.	FRESH GREEN BEANS ____ Ingredients: fresh green beans.
6.	FRESH ORANGE ____ Ingredients: fresh orange.	GIANT ORANGE DRINK ____ Ingredients: water, sugar, corn syrup, orange solids, orange juice concentrate, natural flavors, malic acid, vitamin C, artificially colored.
7.	PILLSBURY WHOLE WHEAT FLOUR ____ Ingredients: whole wheat flour.	ENRICHED WHITE FLOUR ____ Ingredients: enriched white flour.
8.	GIANT ENRICHED WHITE BREAD ____ Ingredients: enriched flour, water, corn sweetener, shortening, yeast, salt.	HEIDI FRENCH ROLLS ____ Ingredients: flour, water, salt, corn sweetener, yeast, shortening, liquid malt, dough conditioner.
9.	HEAVY CREAM for Whipping ____ Ingredients: heavy cream.	DREAM WHIP BRAND Whipped Topping Mix ____ Ingredients: sugar, hydrogenated palm kernel and soybean oils, propylene glycol, monostearate, corn syrup solids, sodium caseinate, whey solids, sodium silicoaluminate, hydroxylated soybean lecithin and acetylated monoglycerides, artificial flavor, BHA, and citric acid, and artificial coloring.
10.	HEIDI WHEAT BREAD ____ Ingredients: enriched wheat flour, water, enriched flour, corn sweetener, yeast, vegetable shortening, nonfat dry milk, salt, whey, yeast, vitamins....	ARNOLD'S 100% WHOLE WHEAT BREAD ____ Ingredients: whole wheat flour, stone ground whole wheat flour, water, unsulfured molasses, liquid vegetable shortening, corn syrup, fresh yeast, salt, nonfat dry milk, dough conditioner, calcium propionate.

	A		B	
11.	GIANT'S WHOLE WHEAT BREAD Ingredients: stone ground whole wheat flour, water, corn syrup, soybean oil, whey solids, yeast, molasses, salt, soy flour, dough conditioner....	____	WONDER ENRICHED WHITE BREAD Ingredients: enriched flour, water, dextrose, shortening, yeast, whey, salt, soy flour, dough conditioner, yeast nutrients, calcium propionate.	____
12.	QUAKER "QUICK" OATS Ingredients: 100% rolled oats.	____	COOKY CRISP Sweetened Cereal Artificial Chocolate Chip Flavor Ingredients: sugar, yellow corn flour, rice flour, wheat flour, oat flour, coconut oil, salt, corn syrup, artificial flavor, cocoa, corn starch, vitamins....	____
13.	ENRICHED SPAGHETTI Ingredients: enriched spaghetti.	____	PLAIN SPAGHETTI Ingredients: spaghetti noodles.	____
14.	KRAFT AMERICAN PASTEURIZED PROCESS CHEESE FOOD Ingredients: American cheese, water, whey, skim milk, cream, sodium citrate, salt, sodium phosphate, sorbic acid, artificial color.	____	CHEDDAR CHEESE Ingredients: aged cheddar cheese.	____
15.	FRESH POTATO Ingredients: fresh potato.	____	BETTY CROCKER POTATO BUDS Ingredients: dried potato, mono and diglycerides, calcium stearoyl-2-lactylate, sodium phosphate, sodium sulfite and BHT.	____

	A		B	
16.	DEVONSHEER BROWN RICE WAFERS A natural product--No sugar added, No shortening, No preservatives Ingredients: Natural brown rice, salt.	____	DEVONSHEER PLAIN MELBA TOAST Ingredients: white flour, rye flour, molasses, yeast, salt, vegetable shortening, wheat germ and sugar.	____

ANSWERS TO PROCESSED VS LESS-PROCESSED FOODS

The following are the least processed, more nutritious choices:

1. A
2. B
3. B
4. A
5. B
6. A
7. A
8. A
9. A
10. B
11. A
12. A
13. A
14. B
15. A
16. A

WEEK C--DAY 4

Team Practice Session

Worksheet C: Making Your Own Wise Food Choices

1. True or False? A variety of factors such as television advertisements, family food habits and likes and dislikes of friends may influence which foods we choose to eat.

2. Which is the ONLY time below that Bob does not have complete control over his food choices?
   A. Bob is eating dinner with his family.
   B. Bob buys an after-school snack.
   C. Bob fixes himself breakfast.

3. Choose the most nutritious snack:
   A. Cookies and orange drink
   B. Pretzels and coke
   C. Cheese and crackers, orange juice

4. To which food below has sugar been added by the manufacturer:
   A. 100% orange juice
   B. Coke
   C. Milk
   D. 100% grapefruit juice

5. Which snack would be better for your teeth?
   A. Caramel candy
   B. Crackers with jelly
   C. Sugar-coated breakfast cereal
   D. Peanuts

6. Which of the following is (are) reasons why foods containing a large amount of sugar may be harmful?
   A. Sugar promotes dental decay (cavities)
   B. Sugary foods may take the place of more nutritious foods which the body needs
   C. Foods with a lot of sugar often contain very few other nutrients
   D. A and B
   E. All of the above

7. When bacteria in the mouth mix with _____________ in food, acid is formed which may cause a cavity in the tooth.

8. Which of the following is the most nutritious breakfast?
   A. Trix presweetened cereal, milk
   B. Orange slices, Cheerios, milk
   C. Jelly, toast, coffee
   D. Doughnut, sweetened grapefruit juice

9. Which snack would be the "safest" for your teeth?
   A. Cookies
   B. Pizza
   C. Lollipop
   D. Jelly and crackers
   E. Raisins

10. True or False? Commercials for sugar-coated (presweetened) cereals often trick you into buying the cereal by promising strength and popularity if you eat the cereal.

11. True or False? The more sugar a cereal contains, the less nutritious it is.

12. True or False? Reading a food label can help you choose the food which is most nutritious.

13. The first ingredient on the food label is:
   A. The ingredient found in the smallest amount in the product
   B. The ingredient with the most letters in it
   C. The ingredient found in the largest amount in the product

14. Here are two food labels. Which cereal is the more nutritious choice?

   A. Ingredients: sugar, corn syrup, oats, fortified with 8 vitamins and minerals.
   B. Ingredients: 100% whole wheat, no sugar added.

15. True or False? A cereal which has sugar as its first ingredient and is fortified with vitamins and minerals is more nutritious than a cereal with no sugar and no fortification.

16. Adding nutrients to a product which were never in the product originally is called ______________________________.

17. The manufacturer adds artificial color and flavors to products to:
   A. Keep the product from spoiling
   B. Make the product more nutritious
   C. Make the product look and taste better, so it will sell better

18. True or False? Since artificial colors and flavors do not make the food a more nutritious product, it is better to avoid these artificial chemicals whenever possible.

19. True or False? Fruits canned in heavy syrup should be avoided because the syrup contains so much sugar.

20. If you are buying canned fruit, the best choice would be:
    A. Fruit canned in its own juice
    B. Fruit canned in heavy syrup
    C. Fruit canned in light, sugary syrup

21. Anything done to a food which changes it from its original (natural) form is called:
    A. Processing
    B. Enrichment

22. Which is NOT an example of a processed food:
    A. Canned fruit
    B. Fresh broccoli
    C. White flour
    D. Presweetened cereals

23. True or False? A whole grain (less-processed) product has more nutrients than an enriched product.

24. What is a main disadvantage of processing?

25. When some of the nutrients lost during processing are "added back" to a food, it is called a (an) ____________________ product.

26. Which has the most nutrients?
    A. Whole wheat bread
    B. White bread
    C. Enriched white bread

27. When wheat is milled into white flour, nutrients are lost. If some of these lost nutrients are "added back" to the white flour, it is called:
    A. Whole wheat flour
    B. Fortified flour
    C. Enriched white flour

28. True or False? An "enriched" product has had all the nutrients which were lost in milling added back.

29. True or False? Whole grains and unprocessed foods like fresh fruits and vegetables are important to eat because they help move food through the digestive system.

30. Read the labels. Which is the less-processed, more nutritious product?

    A. Ingredients: whole wheat, vegetable oil, salt, BHA, BHT.

    B. Ingredients: enriched flour, vegetable shortening, salt, malt, leavening, whey.

ANSWERS TO TEAM WORKSHEET C

1. True
2. A
3. C
4. B
5. D
6. E
7. Sugar
8. B
9. B
10. True
11. True
12. True
13. C
14. B
15. False
16. Fortification
17. C
18. True
19. True
20. A
21. A
22. B
23. True
24. Nutrients are lost
25. Enriched
26. A
27. C
28. False
29. True
30. A

WEEK C--DAY 5

TOURNAMENT

GAME C ANSWER SHEET

MAKING YOUR OWN WISE FOOD CHOICES

OBJECTIVES: To explain reasons for avoiding foods which contain large amounts of sugar.

To name several nutritious and "orally safe" snacks which could be chosen instead of foods which contain a lot of sugar, fat and calories and few nutrients.

To identify the least processed and most nutritious foods by comparing food labels of various products.

ANSWERS

C-1	B	C-11	True	C-21	False
C-2	False	C-12	False	C-22	B
C-3	B	C-13	B	C-23	A
C-4	B	C-14	True	C-24	A
C-5	A	C-15	False	C-25	C
C-6	True	C-16	B	C-26	C
C-7	C	C-17	False	C-27	True
C-8	D	C-18	C	C-28	Sugar
C-9	E	C-19	A	C-29	C
C-10	B	C-20	B	C-30	True

GAME C: MAKING YOUR OWN WISE FOOD CHOICES

Which example below shows that Jane takes responsibility for making her own food choices?

A. Jane skips breakfast because her older sister does.
B. Jane's mother offers her cake as a snack, but Jane has cheese and crackers instead.
C. Alice persuades Jane to split a Milky Way candy bar with her after school.

C-1

True or False? Snacks are NOT an important source of nutrients for the body.

C-2

Which statement is NOT a reason that foods high in sugar should be avoided?

A. Sugary foods usually have few other nutrients.
B. Many foods contain natural sugar.
C. Sugar may promote dental caries.
D. Eating too many sugary foods may cause you to gain weight.

C-3

Which of the following does NOT promote tooth decay?

A. Presweetened breakfast cereals
B. Fresh fruits
C. Soda
D. Marshmallows

C-4

Which is the ONLY time below that Bob does not have complete control over his food choices?

A. Bob is eating dinner with his family.
B. Bob buys an after-school snack.
C. Bob fixes himself breakfast.

C-5

True or False? Celery, lettuce, apples and carrots are all examples of "detersive " foods.

C-6

Choose the most nutritious snack:

- A. Cookies and orange drink
- B. Pretzels and coke
- C. Cheese and crackers, orange juice

C-7

Which snack would be better for your teeth?

- A. Caramel candy
- B. Crackers with jelly
- C. Sugar-coated breakfast cereal
- D. Peanuts

C-8

Which of the following is (are) reasons why foods containing a large amount of sugar may be harmful?

- A. Sugar promotes dental decay (cavities).
- B. Sugary foods may take the place of more nutritious foods which the body needs.
- C. Foods with a lot of sugar often contain very few other nutrients.
- D. A and B
- E. All of the above

C-9

Susie just saw a commercial for a new presweetened cereal. The children in the commercial were popular, attractive and strong. Susie asks her mother to buy her the cereal so that she, too, will be popular. This is an example of:

A. A commercial on the importance of eating breakfast
B. A commercial which "tricks" people into buying the product
C. A commercial for a nutritious product

C-10

True or False? Manufacturers add a lot of sugar to cereals so that children will ask their parents to buy the sweet-tasting products.

C-11

True or False? Reading a food label will not tell you what ingredients are in the food.

C-12

Which of the following has the least sugar?

A. Orange drink
B. Orange juice
C. Orange Kool-Aid
D. Orange Hawaiian Punch

C-13

True or False? If sugar is the first ingredient on the label, the product contains more sugar than anything else.

C-14

True or False? We are expected to get all our vitamins and minerals from cereal and therefore it is important that we buy fortified cereals even though they are high in sugar.

C-15

Here are two food labels. Which cereal is the more nutritious choice?

A. Ingredients: sugar, corn syrup, oats, fortified with 8 vitamins and minerals.

B. Ingredients: 100% whole wheat, No sugar added.

C-16

True or False? A food which has sugar as the first ingredient on the label and which contains artificial colors and flavors is a wise food choice.

C-17

Which snack would have the least sugar?

A. Gelatin
B. Hostess Twinkie
C. Pumpkin seeds
D. Kool-Aid

C-18

Anything done to a food which changes it from its original (natural) form is called:

- A. Processing
- B. Enrichment

C-19

Which is not an example of a processed food:

- A. Canned fruit
- B. Fresh broccoli
- C. White flour
- D. Presweetened cereals

C-20

True or False? An enriched product has had all of the nutrients which were lost during milling added back.

C-21

Which product is unprocessed and thus has more nutrients?

A. White rice
B. Brown rice
C. Enriched white rice

C-22

Which would be least helpful in moving food through the digestive system?

A. Processed foods
B. Fresh fruits
C. Fresh vegetables
D. Whole grain products

C-23

Read the labels. Which is the less processed, more nutritious product?

A. Ingredients: whole wheat, vegetable oil, salt, BHA, BHT.	B. Ingredients: enriched flour, vegetable shortening, salt, malt, leavening, whey.

C-24

When wheat is milled into white flour, nutrients are lost. If some of these lost nutrients are "added back" to the white flour, it is called:

A. Whole wheat flour
B. Fortified flour
C. Enriched white flour

C-25

The manufacturer adds artificial colors and flavors to products to:

A. Keep the product from spoiling
B. Make the product more nutritious
C. Make the product look and taste better, so it will sell better

C-26

True or False? A whole grain (less processed) product has more nutrients than an enriched product.

C-27

When bacteria in the mouth mix with ________________ in food, acid is formed which may cause a cavity in the tooth.

C-28

The **first** ingredient on the food label is:

A. The ingredient found in the smallest amount in the product
B. The ingredient with the most letters in it
C. The ingredient found in the largest amount in the product

C-29

True or False? Since artificial colors and flavors do not make the food a more nutritious product, it is better to avoid these artificial chemicals whenever possible.

C-30

BREAKFAST

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		How many of you choose what you'd like to eat for breakfast?		
		How many of you make your own breakfast?		
		How do you feel if you don't eat breakfast?		
BREAKFAST IS THE MOST IMPORTANT MEAL OF THE DAY	To state the importance of eating a good breakfast	Film: "Eating on the Run."	Film--"Eating on the Run."	Film: "Eating on the Run"--National Agriculture Library
		Tell class to note the different foods which can be eaten for breakfast. Also have them note what happens when people don't eat a good breakfast.		
		What does the word "breakfast" mean?	Write word BREAK FAST on blackboard.	Blackboard Chalk
		BREAK Fast--How many hours is it from your last meal until you wake up? (8-11 hours).		
		You know how hungry you get between lunch and dinner, and that's only 5-6 hours!		
		When you were sleeping, your body used up the energy from the food you ate--just as a car won't run right without gas, your body won't work right without some fuel (food).		

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		That's why it's so important to start the day right with something to eat! Even if you think you're too sleepy to be hungry early in the morning, it's a long time to go without fuel if you don't eat until lunch!		
ANY TYPE OF FOOD CAN BE EATEN FOR BREAKFAST	To state nontraditional breakfast foods	What kinds of foods can you eat for breakfast? (ANY!) What are some breakfasts you can carry with you if you are in a hurry? (peanut butter sandwich, left-over meat, banana and peanut butter on toast, cheese and crackers, cottage cheese and fruit, fruit and yogurt, bagel, dried fruit, fresh fruit, peanut butter and cheese crackers, hard cooked egg, etc.) Stress that there is no reason that any food cannot be eaten for breakfast as long as it is nutritious. Breakfast is a good meal for YOU to take the responsibility for making wise food choices.	Discuss some nontraditional-type breakfast foods such as leftovers, sandwiches, fish, eggnog, blended fruit juice drinks, yogurt, cheese, etc.	

CONCEPT	OBJECTIVES	CONTENT	LEARNING EXPERIENCES	MATERIALS AND RESOURCES
		Remember to try to include whole grain products, fresh fruits and products with a low sugar content when planning your meals.		
	To plan three breakfasts, one for someone who has a lot of time to make and eat his/her breakfast, one for someone who is in a hurry, and one for someone who does not want traditional breakfast foods.	Activity in teams--plan three breakfasts.	Divide class into teams to complete the Plan Three Breakfasts handout. Time permitting, share some of the breakfasts which have been planned with the rest of the class.	Plan Three Breakfasts handout Pencils
		Show poster--"What Did You Have for Breakfast Today?"	Discuss poster--"What Did You Have for Breakfast Today?"	Poster--"What Did You Have For Breakfast Today?"--National Dairy Council
		Discuss how people around the world eat different breakfast foods--fish, meat, etc.		

DIFFERENT BREAKFASTS FOR DIFFERENT NEEDS

1. It is Sunday morning and Jimmy has decided to make himself breakfast instead of waiting for the rest of the family to wake up. He is in no hurry and wants to eat a nice, hearty breakfast. Plan a nutritious breakfast for Jimmy which includes foods from at least three of the Basic 4 food groups.

____________________________ ____________________________

____________________________ ____________________________

____________________________ ____________________________

2. Janice wants to get to school early today so that she can practice the flute before band rehearsal this morning. She has decided to eat her breakfast on the way to school to save time. Plan a nutritious breakfast for Janice which she can carry with her. Include foods from at least three of the Basic 4 food groups.

____________________________ ____________________________

____________________________ ____________________________

____________________________ ____________________________

3. David knows how important it is to eat a good breakfast to make the day start right, but this morning he does not feel like having a traditional breakfast of juice, toast, cereal, egg and milk. Plan a breakfast for David which does not include these typical breakfast foods. Include foods from at least three of the Basic 4 food groups.

____________________________ ____________________________

____________________________ ____________________________

____________________________ ____________________________

Discuss your meal plans with the rest of the class when you are finished.

ADDRESSES OF RESOURCE CENTERS FOR MATERIALS USED IN THE CURRICULUM

American Dental Association
Patient Counseling Film Library
211 East Chicago Avenue
Chicago, Illinois 60611
(remittance must accompany rental requests)

Argus Communications
7440 Natchez Avenue
Niles, Illinois 60648
(charges for publications)

Center for Science in the Public Interest
1755 S Street, N.W.
Washington, D.C. 20009
(charges for publications)

Center for Social Organization of Schools
The Johns Hopkins University
Baltimore, Maryland 21218
(no charge for published reports)

Martha Blois Fund for Applied Nutrition
26 Marion Avenue
Merrick, New York 11566
(charges for publications)

Millers' National Federation
1776 F Street, N.W.
Washington, D.C. 20006
(usually no charge for materials)

Modern Talking Picture Service
Film Libraries Circulation Dept.
2323 New Hyde Park Road
New Hyde Park, New York 11140
(free loan)

NASCO Life/Forms Replicas
Fort Atkinson, Wisconsin 53538
or
Modesto, California 95352
(charges for materials)

National Agricultural Library
Food and Nutrition Information Center (USDA)
Beltsville, Maryland 20705
301/344-3719
(most materials are available on a free loan basis)

National Dairy Council
6300 North River Road
Rosemont, Illinois 60018
(check phonebook for local Dairy Council; charge for some materials)

West Virginia Dept. of Education
Bureau of Services
School Lunch Branch
Charleston, West Virginia 25306
(may charge for publications)

Wheat Flour Institute
14 East Jackson Blvd.
Chicago, Illinois 60604
(usually no charge for materials)

231

SELECTED REFERENCE LIST FOR TEACHERS

Textbooks

Robinson, C. H., Fundamentals of Normal Nutrition, 3rd Ed., New York: McMillan Publishing Co., Inc., 1978.

Wilson, E. D., K. H. Fisher and M. E. Fugua, Principles of Nutrition, New York: John Wiley & Sons, Inc., 1975.

General Information Books

Gifft, H. H., M. B. Washbon, and G. G. Harrison, Nutrition, Behavior and Change, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972.

Gregg, W. H., Physical Fitness Through Sports and Nutrition, New Jersey: Charles Scribner Sons, 1975.

Lappe, F. M., Diet for a Small Planet, Revised Ed., New York: Ballantine Books, 1975.

Lerza, C. and M. Jacobson, Food For People, Not For Profit, New York: Ballantine Books, 1975.

Peterkin, B., J. Nichols, and C. Cromwell, Nutrition Labeling, Washington, D.C.: USDA, 1975

Ideas for Use with Children

Cobb, V., Science Experiments You Can Eat, Philadelphia, Pa.: J. B. Lippincott, 1972.

Goodwin, M. T. and G. Pollen, Creative Food Experiences for Children, Washington, D.C.: Center for Science in the Public Interest, 1974.

SELECTED REFERENCE LIST FOR ELEMENTARY SCHOOL STUDENTS*

Asimov, I., *How Did We Find Out About Vitamins?*, Walker, 1974.

Callahan, D. L. and A. S. Payne, *The Great Nutrition Puzzle*, New York: Charles Scribner's Sons, 1956.

Elgin, K., *The Human Body: The Digestive System*, New York: Franklin Watts, Inc., 1973.

Jones, H., *How to Eat Your ABC's*, Four Winds, 1976.

Martin, M. *The Great Vitamin Mystery*, Chicago: National Dairy Council, 1971.

Pritz, A., *How Your Body Uses Food*, Chicago: National Dairy Council, 1971.

---

*Selected from Annotated Bibliographies by the Minnesota State Department of Education, 1977 and the Massachusetts Department of Education

This curriculum is suggested for
high school students.

TEST I

The following statements are either true or false. Read each sentence and place the correct answer on the space provided to the left of the question number. Please write out either TRUE or FALSE.

____ 1. The milk group contains only milk.

____ 2. There are four basic food groups.

____ 3. All food labels are required to contain the Recommended Dietary Allowances for the nutrients contained in the food.

____ 4. The ingredient present in the smallest quantity by weight in a product will be the last ingredient listed in the list of ingredients.

____ 5. A place setting includes all the flatware and dishes necessary to eat the foods served at the meal.

____ 6. Good health can be endangered by following fad diets.

____ 7. Vitamin D can be obtained from fortified milk and from exposure to sunlight.

____ 8. There are eight leader nutrients that must appear on nutrition information labels.

____ 9. It is best to eat only two meals per day.

____ 10. Diabetes and heart disease are related to obesity.

____ 11. Common household measurements are used to describe the serving size on nutrition information labels.

____ 12. Breakfast should never be omitted from the meal pattern.

____ 13. FDA stands for Food and Drug Administration, an agency which helps control the safety of foods available to the consumer.

____ 14. When reading nutrition information labels, any food that contains over 15 percent of the RDA of a nutrient is considered a good source of that nutrient.

____ 15. Everything you read about nutrition is not necessarily true.

____ 16. If you eat one serving of food from each of the Basic 4 food groups each day, you will be receiving sufficient protein, carbohydrate, fat, vitamins, minerals and calories.

____ 17. People who do not get enough iron in their diet may become anemic.

____ 18. "Empty calories" are calories that provide many nutrients to the body and few calories.

____ 19. Most women and adolescent girls, especially in their menstruating years, have diets deficient in iron.

____ 20. The dinner fork, salad fork and napkin are placed to the right of the dinner plate.

____ 21. The Basic 4 food groups do not include sugars and fats.

____ 22. Vitamin pills give you more energy and pep than would a balanced diet.

____ 23. Good eating habits and better nutrition are not encouraged with the use of well-planned menus.

____ 24. Guidelines have been set up for Americans to follow that tell how much of each nutrient is needed every day to maintain the nutritional well-being of almost everyone. These guidelines are called the Recommended Dietary Allowances.

____ 25. Many foods are enriched because milling processes remove many of the nutrients present in the original food.

____ 26. The best snack foods are high in sugar, fat and calories because they give you the extra energy you need.

____ 27. Nutrition information labels all follow a standard format.

____ 28. In general, people who watch the types of foods they eat feel and look better than people who eat anything they like and do not have a balanced diet.

____ 29. Two types of carbohydrates are starches and sugars.

____ 30. Detailed instructions for preparing food dishes are called recipes.

TEST II

____ 1. There are different RDA's for males and females according to age.

____ 2. The ingredient in greatest quantity by weight in a product must be listed first in the list of ingredients on the label.

____ 3. Proper meal planning includes the use of the Basic 4 food groups.

____ 4. Vitamin E is provided to the body through the use of butter, margarine and oils.

____ 5. Cellulose and fiber aid in the prevention of constipation.

____ 6. Sixteen to 18-year-olds need 2 cups of milk each day to meet the guidelines of the Basic 4.

____ 7. By using food labels, you can become a more efficient shopper.

____ 8. Factors to consider when planning a meal include shape, color, texture and size of the foods.

____ 9. Ascorbic acid and Vitamin C are two separate vitamins.

____ 10. Advertisers are always concerned about the nutritional well-being of all humans and therefore advertise only nutritious foods.

____ 11. The time and energy spent to prepare a meal is not related to the types of food you buy.

____ 12. The B vitamin complex includes thiamin, calcium and niacin.

____ 13. The way you look and feel may be a result of the way you eat.

____ 14. Water provides no energy to the body, but is essential for proper functioning of body processes.

____ 15. Foods that have been grown without any commercially prepared fertilizers are referred to as organic foods.

____ 16. The meat group contains eggs, fish, poultry, beef and peanuts.

____ 17. Even though commercially prepared foods are convenient, they are not always the best choice because they do not always contain as many nutrients as fresh foods.

____ 18. Neither serving size nor servings per container are included on nutrition information labels.

____ 19. Not all cereals are good choices for breakfast foods because they contain large quantities of sugar.

____ 20. Natural foods are not supposed to contain artificial ingredients like coloring, preservatives and flavorings.

____ 21. Constipation in a normal, healthy person can usually be relieved by increasing dietary fiber.

____ 22. Exercise is a very important part of weight control, along with caloric restriction.

____ 23. Different food customs are a result of cultural background.

____ 24. It's not necessary to have a food from each of the food groups each day to have a balanced diet.

____ 25. The meals you eat regularly are referred to as your diet.

____ 26. Both synthetic vitamins and natural vitamins perform the same function in the body.

____ 27. USRDA stands for United States Reserved Dietary Allowances.

____ 28. The body receives its energy from food in the form of calories from carbohydrates, protein and fats.

____ 29. A deficiency disease resulting from lack of Vitamin A is night blindness.

____ 30. The fat, cholesterol and salt contents in foods are required to be on nutrition information labels.

GAME SCORE SHEET

DATE ____________________ CLASS ______________________________

TOURNAMENT TABLE NUMBER __________ TOURNAMENT NUMBER ________________

PLAYERS		SCORES		
Names	Team	Day's Points	Tournament Pts.	Next Table
1.				
2.				
3.				
4.				
5.				

Absent Students:

1.

2.

TEAM SUMMARY SHEET

TEAM NAME ______________________

Team Members	Tournament Points				
	Date				Final Points
1.					
2.					
3.					
4.					
5.					
6.					
TOTALS					

Pts. rec'd this tournament	Total rec'd to date

212

STUDENT OPINIONNAIRE

1. Age: ________________

2. Sex: ________________

3. Class: ______________

4. Major course of study: ________________________________

5. Do you prefer to learn by working in groups ____ or alone ____?

6. Did you enjoy your 4-week nutrition education classes taught by TGT (Teams-Games-Tournaments)? Yes ____ No ____

7. Did you find the presentations in class (you may check more than one):

   interesting ____ | fun way to learn ____
   boring ____ | no different than any other class ____
   stimulating ____

8. Did the teacher present the material as if she were interested in nutrition? Yes ____ No ____

9. Do you think the skilldrill helped you review the material learned earlier in the week and prepare you for the tournament? Yes ____ No ____

10. Do you believe what you have learned in the past 4 weeks will affect your choice of foods? Yes ____ No ____ Don't Know ____

11. Did you like playing the tournaments? Yes ____ No ____

12. How much do you think you have learned in the past 4 weeks about nutrition? A little ____
    Some ____
    A lot ____

13. What do you believe is the most important thing you learned about nutrition during the past 4 weeks? ________________________
    ____
    ____

14. Before beginning this course did you think you would like ____ or dislike ____ learning about nutrition?

15. What is the main reason you liked this unit (if you liked it)?
(Check only one) I like learning about nutrition ____
I like learning by Teams-Games-Tournaments (TGT) ____
I like learning nutrition by Teams-Games-Tournaments (TGT) ____

16. From the following list of topics, CIRCLE the ones you wish would have been included in your nutrition education program.

vegetarian diets
safest age to have a baby
bottle vs breast feeding
growth and development
feeding infants and children
food advertising
diet in relation to heart disease
diet in relation to cancer
diet in relation to diabetes
nutrition and dental health
how diet affects your offspring
how smoking, alcohol and drugs are related to food needs

Others you wish were included:

17. From the following list of topics covered in your nutrition education program, CROSS OUT the ones you think should have been omitted or should be omitted in the future.

gaining and losing weight
organic and health foods
foods the body needs
fad diets
diet in relation to complexion, hair and nails
reliability of nutrition information
food preparation
meal planning
exercise and food needs
need for vitamins and minerals
nutrition labeling

OTHERS:

18. If you have any other comments you would like to make about the activities you did in the past 4 weeks or about learning by TGT, I would appreciate it if you would write them below. Your comments will be very helpful to me.

THANK YOU FOR HELPING ME IN THE PAST 4 WEEKS. I HOPE YOU HAVE LEARNED SOME USEFUL INFORMATION ABOUT NUTRITION!

TGT FIELD TEST

TEACHER'S OPINIONNAIRE

NAME ______________________________

POSITION ______________________________

DATE COMPLETED ______________________________

SCHOOL ______________________________

STREET ADDRESS ______________________________

CITY/STATE/ZIP CODE ______________________________

1. How many persons were in each class in which you used TGT?

2. What were your principal reactions to TGT? (Please be as specific as possible.)

3. In general, how did the participants react to TGT?

4. Did participants of different achievement levels respond differently to TGT? (If yes, please describe these differences.)

5. Did some students seem to benefit more from TGT than other students? (If yes, please describe these students and indicate how they seemed to benefit from TGT more than other students did)

6. Were the directions in the guide sufficiently clear and complete? (If not, please describe the directions that were unclear or incomplete.)

7. Were the curriculum materials clear and complete? (If not, please describe the activity and what was unclear or incomplete.)

8. Did you have any problems when you introduced and used TGT? (If yes, please describe what these problems were.)

9. In what ways would you like to see TGT itself modified? Why?

10. In what ways would you like to see the nutrition curriculum modified?

11. Do you plan to continue to use TGT? If not, what are the reasons?

12. Do you plan to continue to use TGT for nutrition education? (Either the materials you already have or a combination of them with new ones you would like to develop.)

13. Of the activities used and listed below, please indicate following each one how effective you thought the activity was. (Ex.--very effective, students learned a lot from it, students thought it was fun, not effective, needs additions, boring, etc.)

WEEK I:
Food Needs of the Body ____________________
The Sorry Saga of Jane ____________________
Crossword Puzzle ____________________
Nutrition and Notable Characters ____________________
Worksheet I ____________________

WEEK II:
Practice Good Nutrition to Look Your Best ____________________
Goldilocks Up-To-Date ____________________
Crossword Puzzle ____________________
Worksheet II ____________________

WEEK III:
Slides: Label It Nutrition - Dairy Council ____________________
Label It Nutrition - Dairy Council ____________________
The Food Fad Bag ____________________
Passing the Food Labels ____________________
Worksheet III

WEEK IV:
Word Find (Words on meal planning and preparation) ____________
Place Settings Activity ____________
Menu Evaluations ____________
Worksheet IV ____________

ADDITIONAL COMMENTS:

THANK YOU VERY MUCH FOR YOUR TIME AND ASSISTANCE!

WEEK I

THE BASIC 4, PROTEINS, CARBOHYDRATES, FATS, VITAMINS AND MINERALS

Instructor's Notes:

DAY ONE

1. Review "Food Needs of the Body."
   Discuss the importance of protein, CHO (carbohydrate), fats, minerals and vitamins. You may ask for foods that are classified as each nutrient, other than the ones on the sheet.
2. Review the Basic 4 food groups, and their recommended servings.

a.	MILK	2 c. adults; 4 c. teenagers
b.	MEAT	2 or more servings
c.	FRUITS & VEGETABLES	4 or more servings
d.	BREADS & CEREALS	4 or more servings

   a. Stress that this is not all the food that is necessary to receive enough calories per day, but that this should be the basic structure to any diet.
   b. Explain that not all foods fit neatly into these four groups, but that many dishes are a combination of the groups, for example, pizza, casseroles and soups.
   c. There is no group for fats and sugars. It should be stressed that although fats and oils are essential to the diet and necessary for normal health, the average American diet is too high in fats, especially saturated fats, and this may be detrimental to good health. Sugar, in the same manner, is typically eaten in large quantities by Americans, and intake should be reduced. It is an important factor in tooth decay and obesity (a weight that is greater than 20 percent above the standard weight for height).
3. Hand out "The Sorry Saga of Jane" and read it in groups together as a class following directions. Discuss. Important words in the story are:
   weight control
   skinny
   fat
   complexion
   irritable
   lost teeth
   bones breaking
   diarrhea
   constipation
   tiredness, fatigue
   energy
   physically fit
   bleeding
   Also be sure the students know the following terms for this week: Basic 4, CHO, Protein, Vitamin, Mineral.

DAY TWO

1. Hand out "Nutrition and Notable Characters." This is for fun, and to review the basic concepts of nutrition. You could introduce it in any way you like, being as innovative as possible.
2. Hand out the crossword puzzle. Tell the students that they are to use their knowledge about nutrition to answer the puzzle questions.

3. For the last 10-15 minutes, have the students find a recipe in a cookbook (in their groups) to cook in lab the next day. Each group should make a food from a different food group.

DAY THREE
1. Preparation for cooking.
2. Students prepare recipes.
3. While eating the dishes, students should be discussing the types of foods they are eating and what the foods provide. You may also have the students look up the caloric value of each of the foods.

DAY FOUR
1. Have an oral review of the information covered this week.
2. Get students together in their teams to practice for the tournament.
3. Hand out Worksheet I. Students should work together as a team.

DAY FIVE
1. Assign students to tournament tables. (These groups are assigned according to achievement levels according to the TGT technique.)
2. Hand out Game I. Begin tournament. Rules for the tournament can be found on the next page.
3. Ten minutes before the end of class, have one person fill out the Game Score Sheet.
4. Collect the sheets from each table with the scores.
5. Put the scores on the Team Summary Sheet arranged according to teams. Add team scores to team totals.
6. Write the newsletter. Hand out in the next class.

GIGS: GENERAL INSTRUCTIONAL GAME STRUCTURE*

MATERIALS NEEDED: (1) Deck of question cards (2) Rules (3) Answer Sheet

The Rules

1. To start the game, shuffle the deck of cards and place it face down on the table. Decide who will be player number 1. Play is clockwise from player number 1.

2. Each player (when it is his or her turn) must take the top card from the deck, read it aloud, and do one of two things:

    a. Answer the question immediately and ask if anyone wants to challenge the answer. The player to the right of the person giving the answer has the first chance to challenge. If he or she does not wish to challenge, then the next player to the right can challenge.

    b. If he or she does not know the answer, or is not sure of the answer, ask if another player wants to give an answer. If no one wants to give an answer, the card is placed on the bottom of the deck. If another player gives an answer, the procedure described above is followed.

3. If there is no challenge, another player should check the answer. In the lower right hand corner of each card, there is a letter and a number; use this to find the answer on the answer sheet.

4. If there is a challenge and the challenger decides not to give an answer:

    a. If the original answer is wrong, the player must place the card on the bottom of the deck;

    b. If the original answer is correct, the player keeps the card and the challenger must give up one of the cards he or she has already won (if any) and place it on the bottom of the deck.

5. If there is a challenge and the challenger gives an answer:

    a. If the challenger's answer is correct, the challenger receives the card;

    b. If the challenger gives the wrong answer, and the original answer is correct, the challenger must give up one of the cards he or she has already won (if any) and place it on the bottom of the deck;

250

   c. If both the challenger's answer and the original answer are wrong, the card is placed on the bottom of the deck.

6. At the end of the game, when there are no more cards in the deck, each player counts up the number of cards he or she has and records this number as his or her score. The player who has the most cards is the winner.

*Reprinted with permission from the Center for Social Organization of Schools, The Johns Hopkins University, Baltimore, Maryland

FOOD NEEDS OF THE BODY*

NUTRIENT	PURPOSE	SOURCE	LACK OF NUTRIENT
Protein	1. builds and repairs body tissue 2. builds resistance to disease	milk, eggs, cheese, nuts, meat, peanut butter	1. lowered resistance to disease 2. mental and physical fatigue 3. stunted growth
Carbohydrates 1. starches 2. sugar	1. fuel food 2. provides energy	1. starches, bread, cereal, cereal products, dried beans 2. sugars, honey	1. underweight 2. fatigue 3. lack of energy 4. hunger
Fats	1. provide heat and energy 2. protect vital organs	cream, butter, margarine, egg yolk, bacon, nuts and cheese	1. underweight 2. fatigue
Minerals 1. Calcium and Phosphorus	1. build strong bones and teeth	milk, milk dishes, cheese	1. bone deformation 2. poor teeth
2. Iron	2. aids in blood clotting, builds blood and tissue	lean meat, liver, oysters, egg yolk, whole grain bread	1. fatigue 2. nutritional anemia
3. Iodine	proper functioning of thyroid gland	seafood, iodized salt	simple goiter
Vitamins 1. A	growth, resistance to infection, helps eyes adjust to light changes	liver, butter, leafy green and yellow vegetables	1. rough, scaly skin 2. night blindness 3. retarded growth
2. B_1 Thiamine 3. B_2 Riboflavin	aids appetite, aids nervous system	meats, whole grain cereals and bread	1. headache 2. fatigue, nervousness 3. poor digestion, loss of appetite
4. C (ascorbic acid)	1. formation of bones and teeth 2. resistance to disease	citrus fruits, tomatoes, cantaloupe, cabbage	1. sore and bleeding gums called scurvy 2. enlarged joints
5. D ("sunshine vitamin")	builds and maintains good teeth and bones	fish, liver, milk, sunshine	1. poorly formed teeth and bones 2. disease called rickets

* Source: Deborah Borcetti, Old Mill High School, Glen Burnie, Md.

"The Sorry Saga of Jane"

Nutrition is an important part of everyday life. Each of us must realize that to keep ourselves healthy, physically fit and attractive, we must eat proper foods to receive all the necessary nutrients.

If we are able to recognize signs and symptoms of nutritional deficiencies as a result of nutritional habits, and we know the cause of these symptoms, we can begin to make an effort to overcome these problems, and even more serious problems that may result with continuation of poor habits.

Let's see if you can recognize some of these signs and symptoms of nutritionally related problems that affect your health. Read the following story and underline any word that seems to be a problem and could be related to nutrition and the character's nutritional status.

****

THE SORRY SAGA OF JANE*

Jane was sitting on the bed crying. She didn't have a date for the big event and she thought she was ruined. "I know I'm skinny," she said to herself, "and my skin is rough, but Sally is fat and she has a date." What Jane did not recognize was that the boys did not really care whether she had peaches-and-cream complexion and they didn't mind if she was a little underweight. What bothered them was that she was often irritable and they liked a happy date.

As Jane sat there feeling sorry for herself, her grandmother came in. Jane really didn't want to see her right then. She loved her grandmother, but she was always complaining. She had lost all her teeth, her mind wandered and her bones broke easily. At present, her arm was in a sling and Jane knew she wouldn't be in a very jolly mood. She didn't want to hear about grandmother's diarrhea or constipation either, so she politely excused herself and went downstairs where her brother was playing records.

She found him lying on the floor listening to the loud music. "You O.K.?" she asked. "Dead tired," he replied. "I was short of breath on the track today."

About that time her father came bouncing down the stairs full of energy. "You guys want to go get a hamburger?" he asked. "Your mother and I feel like a little break." "O.K., let's go. Hi, Mom, looks like you cleaned house after work today. Are you tired?" "No, I'm fine. Feeling great really, to have it all done and got some exercise at the same time." Jane wondered how her mother could feel great. She certainly would have been tired after all that. She was glad her parents always seemed to be in a good mood, and was proud of them because they were physically fit.

"Come on, granny, we'll get you some ice cream," called Jane's father. As they all went to the car, her brother stumbled and fell on a piece of glass. They thought the cut would never stop bleeding.

*Adapted from Illinois Teacher of Home Economics, XVII, No. 3, January-February, 1974, p. 172.

NUTRITION AND NOTABLE CHARACTERS*

HERE ARE SOME OLD FRIENDS you may remember from your childhood days. Poor things, they need help. You can come to their rescue by filling in the blanks, and giving them some much needed advice about nutrition.

1. Everyone knows that Humpty Dumpty sat on a wall and that he also took a great fall. But not everyone knows that some of his teeth were knocked out and that his gums did not heal because he was lacking Vitamin ______________.

2. Just as Humpty Dumpty fell off the wall, a crooked man went by. The crooked man had just bought a crooked cat which had caught a crooked mouse. Pity them, they all must have rickets because of insufficient Vitamin ______________.

3. In a home nearby lived five little pigs. One little pig was going to the market, one little pig was staying home, one little pig was having roast beef and one little pig was having none. The last little pig cried, "wee, wee, wee" because he knew he needed ______________ so that he could grow as big as the other pigs.

4. Three little pigs in the neighborhood were building homes of straw, brush and brick. The nervous huffing, puffing wolf who gave them a hard time was doing so because he needed pork in his diet to get more of the Vitamin called ______________.

5. Nearby, Jack was making trips up and down the bean stalk to retrieve some of the giant's possessions such as the hen that laid the golden egg. Jack especially treasured these golden eggs because he knew that their yellow yolks contained Vitamin ______________ that he needed.

6. In the distant meadow, Little Boy Blue should have been looking after his sheep, but instead he was under the haystack fast asleep. Perhaps Boy Blue couldn't stay awake because he was suffering from anemia due to insufficient ______________ in his diet.

7. Walking through the woods, Little Red Riding Hood could be seen on her way to grandmother's house. In the basket of food she was bringing to her grandmother, there were several oranges. Red Riding Hood's mother, who packed the oranges in the basket, knew they were a good source of Vitamin ______________, which grandmother needed every day.

8. Next door to grandmother's house, Little Tommy Tucker was singing for his supper. He usually had white bread and butter. Let's hope his bread was enriched with the B-complex vitamins: thiamine, riboflavin and ______________.

9. In the same town, Cinderella lived with her three stepsisters. Cinderella spent most of her days working inside the dark, dingy house. Because she seldom had the opportunity to go outside in the sunshine and since her stepfather did not buy fortified milk, Cinderella was probably lacking sufficient Vitamin ______________.

10. On a tuffet near Cinderella's house, Little Miss Muffet sat eating her curds and whey. It's unfortunate that a spider frightened her away because like all growing girls, she needed ______________ from milk that day.

11. The hill behind Muffet's house was the scene of a magic accident. Jack had fallen down and broken his crown, and Jill had come tumbling after. Both Jack and Jill were severely cut. Let's hope they had been eating foods with sufficient Vitamin ______________ so their blood would clot quickly.

12. Jack and Jill were fortunate not to live in old Mother Hubbard's house. When she went to the cupboard she usually found it bare. There was not a single serving in her cupboard from any of the ____________________ groups.

13. Goldilocks knew it would be useless to go into Mother Hubbard's house. Instead, she made a visit to the home of the Three Little Bears, who had gone out and left their porridge to cool. After eating the little bears' porridge, Goldilocks knew that she has eaten one of her four servings from the ____________________.

14. Even Goldilocks knew that Jack Sprat and his wife had terrible table manners because they licked the platter clean. It was well known that Jack would eat no fat and his wife would eat no lean. Therefore, it can be seen that only Jack was getting enough protein from the ______________ group each day.

15. Little Jack Horner sat in a corner of the Sprat's house, and when he had eaten a plum proudly said, "What a good boy am I." He knew he had one of his four servings from the ______________ food group for the day.

16. The pretty maid who was a friend of little Jack Horner's was walking down the road when she met a handsome stranger who asked, "What is your father my pretty maid?" She replied that her father was a dairy farmer who helped provide the townspeople with their daily requirement from the ______________ group.

17. The pretty maid's father often employed the butcher, the baker and the candlestick maker to churn his butter. They worked very hard to provide the townspeople with this form of ______________ which helped to make their foods more appealing. As they churned, they often hummed, "Rub-a-dub-dub, three men in a tub."

18. The Queen of Hearts used some of this butter to make her tarts. When baking, she frequently sampled her goodies and eventually became as round as her tarts. She would be wise to limit her ___________, so she could lose weight and fit into her favorite dress again, the one she planned to wear to enjoy the fair.

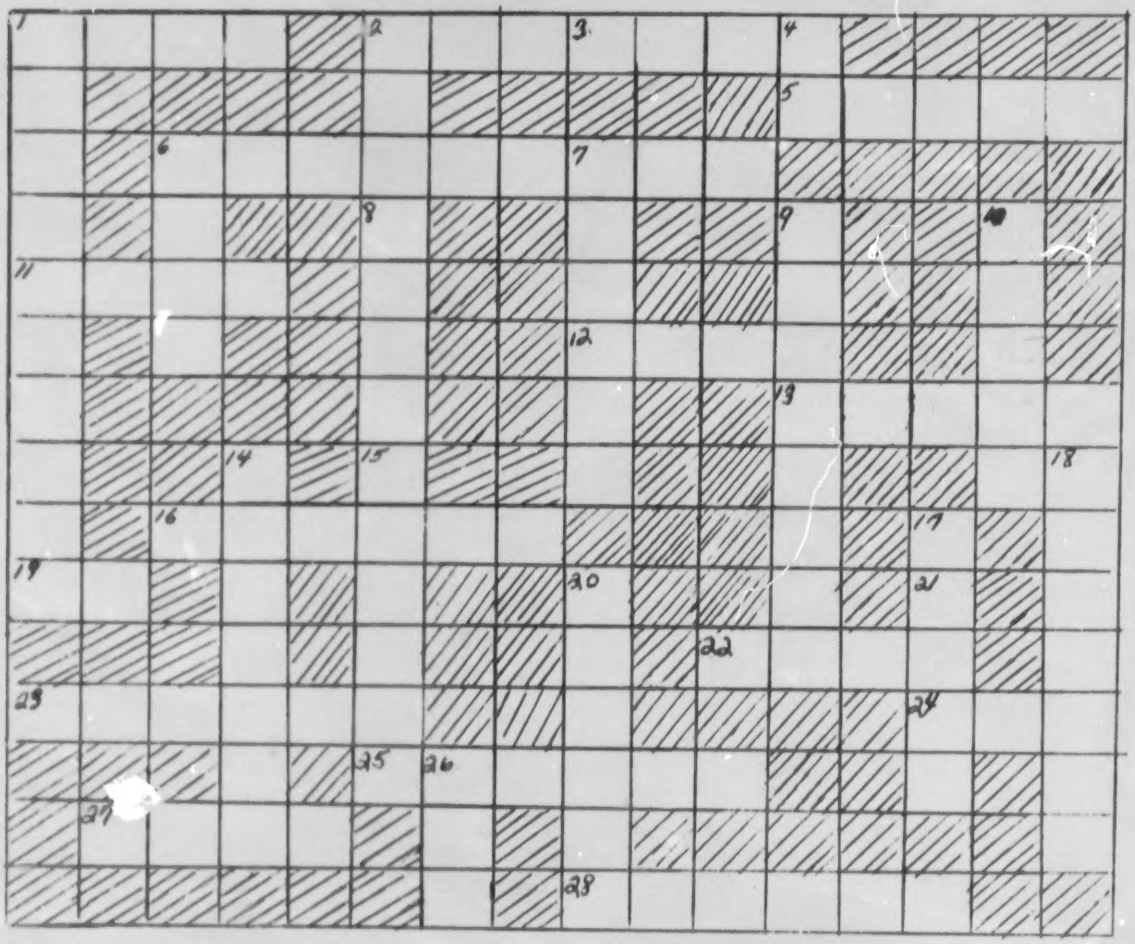
19. One of the Queen's subjects was Simple Simon who met a pieman going to the fair. Said Simple Simon to the pieman, "Let me taste your ware." The pieman replied, "My pies are full of energy and contain lots of starches and sugar. These are forms of _______________ which will give you only energy to enjoy the fair."

20. Polly put the kettle on to make her friends some tea. She knew this would contribute to the eight glasses of _______________ or its equivalent that they should have every day. However, Sukey took the kettle off and told Polly, "Your friends have gone away. They've gone into town to help Humpty Dumpty put himself together again."

*Source: Deborah Borcetti, Old Mill High School, Glen Burnie, Md.

25

NUTRITION CROSSWORD PUZZLE



NUTRITION CROSSWORD PUZZLE*

ACROSS:

1. One serving from the bread and cereal group
2. Mineral that builds strong bones and teeth
5. May be fruit or vegetable and is served before or with main course
6. The science that deals with nutrients in foods
8. Vitamin that aids appetite and nervous system
11. Nutrient that protects vital organs
12. Mineral that clots the blood
13. You might eat a ________ to supplement breakfast, lunch or dinner
15. Vitamin that builds and maintains good teeth and bones
16. Kind of fruit rich in Vitamin C
19. Would you like weekend classes?
21. Vitamin that helps your eyes adjust to light changes
22. Eat two servings from this group each day
23. A food included in the milk group
24. Good source of protein at breakfast
25. Disease caused by lack of Vitamin C
27. To promote good health--eat properly, exercise and get proper ________
28. The Basic 4 suggests you have 3-4 servings per week of deep ________ vegetables

DOWN:

1. Vitamin B_2
2. Starches and sugars
3. Ascorbic acid is Vitamin ________
4. New title for a woman as a result of the feminist movement
6. Food that may be substituted for one serving of meat
7. Mineral that aids in proper in functioning of the thyroid gland
9. Source of Vitamin D
10. Noon meal
14. Disease caused by lack of Vitamin D
17. Regulates the body temperature
18. Lack of food creates ________
20. Food provides our bodies with ________
26. Vegetables may be purchased fresh, frozen or in a ________

*From Deborah Borsetti, Old Mill High School, Glen Burnie, Md.

NUTRITION CROSSWORD PUZZLE

1 R	O	L	L	▨	2 C	A	L	3 C	I	U	4 M	▨	▨	▨	▨
I	▨	▨	▨	▨	A	▨	▨	▨	▨	▨	5 S	A	L	A	D
B	▨	6 N	U	T	R	I	T	7 I	O	N	▨	▨	▨	▨	▨
O	▨	U	▨	▨	8 B	▨	▨	O	▨	▨	9 S	▨	▨	10 L	▨
11 F	A	T	S	▨	O	▨	▨	D	▨	▨	U	▨	▨	U	▨
L	▨	S	▨	▨	H	▨	▨	12 I	R	O	N	▨	▨	N	▨
A	▨	▨	▨	▨	Y	▨	▨	N	▨	▨	13 S	N	A	C	K
V	▨	▨	14 R	▨	15 D	▨	▨	E	▨	▨	H	▨	▨	H	18 F
I	▨	16 C	I	T	R	U	S	▨	▨	▨	I	▨	17 W	▨	A
19 N	O	▨	C	▨	A	▨	▨	20 E	▨	▨	N	▨	21 A	▨	T
▨	▨	▨	K	▨	T	▨	▨	N	▨	22 M	E	A	T	▨	I
23 C	H	E	E	S	E	▨	▨	E	▨	▨	▨	▨	24 E	G	G
▨	▨	▨	T	▨	25 S	26 C	U	R	V	Y	▨	▨	R	▨	U
▨	27 R	E	S	T	▨	A	▨	G	▨	▨	▨	▨	▨	▨	E
▨	▨	▨	▨	▨	▨	N	▨	28 Y	E	L	L	O	W	▨	▨

WORKSHEET I

INSTRUCTIONS: In the following statements, either fill in the blank with a word to make the statement true or choose the one correct answer from the choices given.

1. The bread and cereal group contains the following foods:
   a. peas, corn and tomatoes
   b. eggs, cheese and fish
   c. peanuts, soup and candy
   d. crackers, corn flakes and whole wheat bread

2. Vegetables and fruits is one of the __________ food groups.

3. The meat group contains:
   a. milk and ice cream
   b. cheese and mayonnaise
   c. fish and poultry
   d. potatoes and squash

4. Ice cream and yogurt fit into the _______________ group.

5. _______________ is the science that deals with food and how it interacts with the body.

6. An egg is a good source of ________________.

7. Food is a source of _____________ for our bodies.

8. A B Vitamin is:
   a. ascorbic acid
   b. fat
   c. sugar
   d. thiamin

9. Another name for Vitamin C is __________________.

10. You should have _____ serving(s) of a Vitamin C-rich food each day.

11. The "sunshine vitamin" is Vitamin __________.

12. A diet deficient in Vitamin D will cause __________.

13. _________________ is needed daily and regulates the body temperature, but supplies no protein, carbohydrate or fat to the body.

14. A lack of Vitamin C results in:
    a. beriberi
    b. scurvy
    c. the itches
    d. night blindness

15. The two minerals that are needed for strong, healthy teeth are:
a. calcium and phosphorus
b. thiamin and niacin
c. calcium and copper
d. iron and magnesium

16. Which of the following groups of foods is a good source of Vitamin C?
a. grapes, prunes and raisins
b. bananas, cherries and figs
c. strawberries, cantaloupes and oranges
d. tomatoes, corn and beans

17. Vitamin ______ is needed for proper clotting of your blood to prevent you from bleeding to death if injured seriously.

18. ____________________ ____________________ is a result of Vitamin A deficiency.

19. Vitamin A is found in which group of foods?
a. yellow squash, carrots and sweet potatoes
b. corn, bean sprouts and lettuce
c. string beans, peas and broccoli
d. kidney beans, potatoes and tomatoes

20. Starches and sugars are _________________.

21. This mineral aids in proper functioning of a thyroid gland:
a. magnesium
b. iodine
c. zinc
d. iron

22. A good way to get iodine into your diet is to buy ___________ salt.

23. Milk and sunshine are good sources of ____________ ____________.

24. We get Vitamin E into our diets by including these foods in our diet:
a. fats and oils
b. potatoes and corn
c. spinach and kale
d. olives and pimentos

25. _____________ is the mineral needed especially by women during their menstruating years.

26. The amount of ________ an individual needs each day is related to his age, height and physical activity.

27. Another name for Vitamin B_1 is ________________.

28. Another name for Vitamin B_2 is ___________________.

29. ___________________ are the building blocks of proteins.

30. ___________________ breads are breads that have had thiamine, riboflavin, niacin and iron added to the flour they are made from.

WORKSHEET I

Answer Key

1. d
2. Basic 4
3. c
4. Milk
5. Nutrition
6. Protein
7. Energy
8. d
9. Ascorbic acid
10. One
11. d
12. Rickets
13. Water
14. b
15. a
16. c
17. K
18. Night blindness
19. a
20. Carbohydrates
21. b
22. Iodized
23. Vitamin D
24. a
25. Iron
26. Calories
27. Thiamin
28. Riboflavin
29. Amino acids
30. Enriched

GAME I

OBJECTIVES: At the end of this week, the students should be able to:

1. Write the Basic 4 food groups.
2. List foods contained in each of the Basic 4 food groups.
3. Write deficiency diseases associated with vitamin deficiencies (A, B complex, D, K, C).

INSTRUCTIONS: Read the following questions and answer true or false. If the answer is false, discuss why it's false and restate the sentence to make it a true statement.

****

ANSWERS

A-1	T
A-2	F; another name for C is ascorbic acid
A-3	F; Vitamin A deficiency
A-4	T
A-5	F; it is related to
A-6	T
A-7	F; two or more servings
A-8	T
A-9	F; are calcium and phosphorus
A-10	T
A-11	T
A-12	F; they are good sources
A-13	T
A-14	T
A-15	T
A-16	T
A-17	F; Vitamin K
A-18	T
A-19	T
A-20	F; will cause fatigue
A-21	T
A-22	T
A-23	T
A-24	F; water is needed
A-25	T
A-26	T
A-27	T
A-28	F; they belong in the milk group
A-29	T
A-30	F; they are carbohydrates

GAME I

Vegetables and fruits is one of the Basic 4 food groups. A-1	Lack of fiber is not related to the problem of constipation. A-5
Another name for Vitamin C is thiamin. A-2	Food is a source of energy for our bodies. A-6
Night blindness is a result of a Vitamin E deficiency. A-3	You should have at least four servings from the meat group each day. A-7
Nutrition is the science that deals with food and how it interacts with the body. A-4	The meat group contains fish and poultry. A-8

The two minerals needed for strong healthy teeth are thiamin and niacin.

A-9

Milk and sunshine are good sources of Vitamin D.

A-10

An egg is a good source of protein and belongs in the meat group.

A-11

Nuts and peanut butter are not good sources of protein.

A-12

Thiamin, riboflavin and niacin are all B vitamins.

A-13

Carbohydrates are fuel foods and provide energy to the body.

A-14

Fats and oils provide Vitamin E.

A-15

A nutritional deficiency is the result of a diet deficient in a specific nutrient.

A-16

Vitamin C is needed for proper clotting of the blood when you are bleeding.

A-17

Teenagers need ¼ c. of milk or food from the milk group each day.

A-18

Enriched breads are breads that have thiamin, riboflavin, niacin and iron added to the flour they are made from.

A-19

Lack of proper nutrients in the body will not cause fatigue.

A-20

Thiamin and riboflavin can be obtained by eating meats and whole grain products (whole wheat bread).

A-21

Iron is the mineral needed especially by women.

A-22

One of the B vitamins is thiamin.

A-23

Water is not needed by the body since it provides no nutrients.

A-24

Citrus fruits like oranges and grapefruit are excellent sources of Vitamin C.

A-25

The amount of calcium needed each day is related to age, height and physical activity.

A-26

Fats and sugars are not included in the Basic 4 food groups.

A-27

Ice cream and yogurt fit into the fruit and vegetable group.

A-28

Foods rich in fat and sugar are considered harmful when they crowd out foods that supply essential nutrients.

A-29

Starches and sugars are protein foods.

A-30

WEEK II
NUTRITION RELATED TO PHYSICAL APPEARANCE AND WELL-BEING

Instructor's Notes:

DAY ONE

1. Discuss with students the importance of nutrition for a healthy body. Good nutrition practices help us feel and look our best. Topics to discuss with the students concerning nutrition and health:
   Anemia--results from lack of iron in the diet; characterized by tiredness and fatigue.
   Dental caries/cavities--continued exposure to sugary and sticky foods results in dental decay.
   Obesity/weight control--obesity is excess weight (fat) on the body; weight control is keeping your weight at a desirable level. Obesity can increase chances of having high blood pressure, coronary heart disease, diabetes and fatigue.
   Diabetes--disease in which the body cannot handle the metabolism of CHO. Weight control is important as well as restriction of sugar intake and fat intake.
   Fatigue--weariness from exertion; tiredness.
   Clear complexion--skin free from any imperfections; need adequate vitamins and minerals in the diet.
2. Balanced meals containing a variety of nutrients and meeting the RDA help to avoid health problems. Mention nutrients discussed in the previous week, especially:
   Vitamin A--necessary for normal vision.
   Vitamin C--necessary for good dental hygiene, development of tissues, wound healing and strong bones.
   Thiamin--needed for CHO metabolism, body coordination, body growth, good appetite and healthy nerves.
   Calcium, Phosphorus--needed for tooth and bone development.
   Water--essential to the body functions. Necessary for digestion, regulates body temperature and carries waste products from the body as urine.
   Lack of nutrients can lead to nutrient deficiencies. The result may be deficiency diseases such as "night blindness," scurvy or rickets.
3. Hand out "Practice Good Nutrition to Look Your Best." Read with the students.
4. Hand out "Goldilocks Up-To-Date." Have students complete.

DAY TWO

1. Discuss the following points with the students:
   a. Exercise--this is extremely important for a healthy body. Together with good nutrition, exercise will help you look and feel your best. Getting exercise every day will help you to control your weight and to burn up the calories you eat.

Increasing your exercise and decreasing your caloric intake is the best way to lose weight that detracts from physical appearance. Extra weight also makes you tire more easily. The proper amount of exercise will not make you eat more. Many people believe that this is true. The proper amount of exercise will usually cause you to be less hungry.

b. Sugar--is a CHO; it is also "empty calories"; that is, it supplies no nutrients except calories. Sugar has been associated with obesity, dental caries and diabetes, and may be associated with heart disease. When consuming many calories each day from sugar, you are restricting the amount of nutrients you will be getting from your food. Sugar is also called sucrose. Calories supply energy to the body and are the units of measurement for the energy value of foods. Many cereals are mainly sugar and therefore are not good breakfast foods; they are more like candy.

c. Cellulose and fiber--they are indigestible by the body. They act as a natural laxative to help maintain body regularity for the removal of waste products. They provide "bulk" to the diet and are found in whole grains, fruits and vegetables.

d. Fad diets--for a healthy body it is important to feed it properly and not endanger it in any way. Fad diets are very risky to your health. They are not based on sound nutrition practices. Discuss the checklist for evaluating fad diets (page 218). Emphasize that the best way to lose weight is to decrease calories and increase exercise. This should be done slowly (1-1/2 - 2 pounds/week) and you should work at changing your eating habits or patterns while losing the weight so you won't regain the weight once you go off the diet. Fad diets can be extremely dangerous to your health!

e. Height-weight charts--should be used only as a guideline for determining the range of weight that is desirable for your height and body build.

f. Fat--is an essential part of the diet; however, Americans consume a very high fat diet. Particularly undesirable is a high intake of saturated fats, coming mainly from animal sources (meats, animal shortening, butter, etc.). It is good to increase dietary intakes of polyunsaturated fats (from vegetable sources like corn oil, vegetable oil, margarine, safflower oil, etc.) while decreasing saturated fats. Fat has a very high caloric content, 9 kcal/gm, compared to CHO and protein, which both have 4 kcal/gm. Red meats contain more saturated fats than white meats. Nonfat milk and 2 percent milk also have less fat than whole milk.

g. Snack foods--should be low in fat and sugar; they should provide essential nutrients that will help your body look and feel its best. They should also be a way of increasing the nutritional value of your diet. Discuss good snacks by giving examples.

2. Define "diet." The food you eat every day or the meals you eat every day are referred to as your diet. Eating a balanced diet helps to

keep you in good physical condition and in good mental health, and looking and feeling the way you would like to. Hand out the crossword puzzle and have students complete.

DAY THREE

1. Have students read through the recipes. Point out such things as the low fat and sugar content of the foods; the foods high in fiber, vitamins and minerals; combinations of foods that provide many nutrients, etc.
2. Let the students prepare nutritious snacks, either the ones suggested or any other nutritious snacks.
3. Have students taste all the foods prepared.
4. Hand out "You Can Score With Super Snacks" to the students and read through it.

DAY FOUR

1. Review the topics covered this week with the students.
2. Have students get into their teams and practice for the tournament.
3. Hand out Worksheet II.

DAY FIVE

1. Follow the directions for Week I, Day Five, using Game II.

CRITERIA FOR EVALUATING WEIGHT CONTROL DIETS*

To aid you in judging whether or not a proposed "new" diet for weight control is a sensible one to follow, use the following guidelines. These guidelines assume that the "best" diet is one that a person can adhere to for the rest of his or her life, since weight control is a lifetime problem for most people.

1. The diet must be lower in calories than the person needs to maintain present body weight. Some diets claim that only CHO, not calories, must be low. This is not true.

2. The diet should be adequate in protein, vitamins and minerals. It is unlikely that diets of less than 1000 kcal will supply all the nutrients needed. Check for nutritional adequacy as follows:

   a. Does the diet meet the Basic 4? (This ensures a variety of foods.)
   b. In addition, are there good sources of fiber in the diet? (Whole grains and breads, bran cereals, dried beans, raw fruits and vegetables)
   c. Is the diet low in foods containing saturated fats, cholesterol and sugar?

3. The diet should have fairly good satiety value. A person cannot adhere to a diet if he or she is contantly hungry. Diets with moderate amounts of fiber, fat and protein have good satiety value. Also, a diet extremely low in calories (below 800 kcal) is not likely to have good satiety value.

4. The diet should be planned so that adhering to the diet will mean that the person changes his or her food habits for the better. for many Americans, this means drastically decreasing the intake of foods high in sugar and fat, and increasing the intake of grains, fruits and vegetables. The point here is that most people need to change their eating habits both to lose weight and to nourish themselves well.

5. A diet should be "tailored to the individual"; that is, it should fit into a person's cultural food experiences and way of living. Thus, a student eating in the dining hall should be able to find enough of the foods on his or her diet to allow him or her to choose a nutritionally adequate diet. A student from, let us say, a Spanish-speaking home should understand enough about choices of foods to know how to select or prepare foods he or she is accustomed to so as to adhere to the diet. A diet "tailored to the individual" tends to prevent people from feeling deprived of foods they enjoy.

*Reprinted with permission from Eleanor Williams, associate professor of nutrition, University of Maryland, College Park, Md.

PRACTICE GOOD NUTRITION TO LOOK YOUR BEST*

Sometimes you look at boys and girls who are popular and ask yourself, "What have they got that I haven't?" If you look closely, you will find those popular people are full of life and energy, bubbling over with enthusiasm and looking healthy and happy.

Eating the right food could be the answer! Do you eat the right food?

If you do, you must know about the kinds of food the body needs, and about the daily food guide.

Nutrition is a science that deals with food. Nutritious foods are those that are good for you in some way. Diet refers to the meals you eat regularly, and a balanced diet means eating well-balanced meals to keep you in good physical and mental health. You will study about foods that regulate many body processes.

Body processes are the things that go on inside the body, such as breathing, blood circulation and digestion. Many foods are enriched or fortified.

All the foods you eat are made up of different kinds of substances, or nutrients. You have studied about these in your health classes, and you know them by name... proteins, minerals, carbohydrates, fats and vitamins. Each of these nutrients has a special job to do in the body, and all of them are necessary for good health and proper growth. Most foods contain more than one nutrient, and so help in more than one way.

PROTEINS--build and repair the body.
MINERALS--build and repair the body, and regulate many body processes.
CARBOHYDRATES--furnish the body with heat and energy.
FATS--same as carbohydrates.
WATER--regulates the body temperature, aids in digestion and carries waste materials from the body.

The body uses food for growth and repair, regulation of its many body body processes and supply of heat and energy.

PROTEINS--are body builders, and are found in meat, fish, poultry, milk, eggs, cheese, cereals, breads, vegetables and nuts. They help to give you strong muscles, good posture and are what bones and tissue are chiefly made of. Children especially need these materials to grow.
CARBOHYDRATES--provide fuel for the body's energy and warmth. They are the sugars and the starches. They can be found in breads, cereals, vegetables and fruits.
FATS--provide heat and energy. The fats are found in butter and margarine, cream, cheese, meat, nuts, lard, oils and vegetable fats.

MINERALS--help regulate the many body processes and they help to give you a clean complexion, glossy hair and strong teeth, bones and muscles. They are found in meat, fish, poultry, eggs, milk, cheese, fresh fruit and green leafy vegetables.

VITAMINS--are essential to health and growth, and help vision and skin. They are found in fruits, vegetables, poultry, milk, cheese and eggs.

*Source: Deborah Borsetti, Old Mill High School, Glen Burnie, Md.

CROSSWORD PUZZLE

NUTRITION AND YOUR PHYSICAL APPEARANCE

INSTRUCTIONS: Read the statements on the following page that give you clues to fill in the spaces on the puzzle. All clues give you examples of proper eating habits or foods to eat to help you look and feel your best!

1	7					2		▨	3	4	5
		▨	▨	▨	▨		▨	6			
		▨	▨	▨	▨		▨	▨			
		8	11					▨	▨	▨	
				▨	▨	9				10	
	▨			▨	▨	▨	▨	▨	▨		▨
	13		12	15	16			17	▨		▨
▨			▨			▨	▨		▨		▨
14			▨			▨	▨		▨		▨
▨		▨	▨	▨		▨	▨		▨		▨
▨		▨	18					▨	▨		▨
19										▨	▨

CROSSWORD PUZZLE

NUTRITION AND YOUR PHYSICAL APPEARANCE

ACROSS:

1. __________ are the units used to measure the energy value of foods.
6. A deficiency in certain vitamins and minerals can lead to loss of your __________.
8. You need good __________ to be physically fit and active.
9. This dairy product provides you with live microorganisms for your intestinal tract and is a source of calcium.
12. Eating a nutritious __________ can add to your daily intake of proper nutrients.
14. Having excess amounts of __________ on your body can increase your chances for heart disease and diabetes, can cause you to be fatigued and is physically unappealing.
18. Fruit __________ is a good substitute for soda pop or other nonnutritious drinks.
19. Raw __________ are good for quick snacks and provide many vitamins and minerals instead of empty calories.

DOWN:

1. __________ from dairy products helps develop good teeth and bones that add to our physical appearance.
2. __________ calories are found in foods that supply only calories and no nutrients.
3. __________ diets can endanger your good health and leave you nutritionally deprived; evaluate them carefully before starting one of them.
4. Proper nutrition helps keep us physically __________.
5. __________ makes a good low-calorie snack to help you watch your weight.
7. __________ is a fruit that is a good snack and a good source of fiber if the skin is eaten.
8. The proper weight bracket for you can be found in __________ and weight charts.
10. A good snack that is dried grapes is __________.
11. __________ need adequate amounts of Vitamin A for good vision.
13. An __________ is an excellent source of Vitamin C.
15. __________ is a snack that is small, easy to eat and is a source of protein.
16. __________ is caused by a lack of iron in your diet.
17. Thiamin, riboflavin and niacin are important to have a healthy __________.

CROSSWORD PUZZLE

NUTRITION AND YOUR PHYSICAL APPEARANCE

INSTRUCTIONS: Read the statements on the following page that give you clues to fill in the spaces on the puzzle. All clues give you examples of proper eating habits or foods to eat to help you look and feel your best!

1 C	7 A	L	O	R	I	2 E	S	▨	3 F	4 F	5 F
A	P	▨	▨	▨	▨	M	▨	6 H	A	I	R
L	P	▨	▨	▨	▨	P	▨	▨	D	T	U
C	L	8 H	11 E	A	L	T	H	▨	▨	▨	I
I	E	E	Y	▨	▨	9 Y	O	G	U	10 R	T
U	▨	I	E	▨	▨	▨	▨	▨	▨	A	▨
M	13 O	G	12 S	15 N	16 A	C	K	17 B	▨	I	▨
▨	R	H	▨	U	N	▨	▨	O	▨	S	▨
14 F	A	T	▨	T	E	▨	▨	D	▨	I	▨
▨	N	▨	▨	▨	M	▨	▨	Y	▨	N	▨
▨	G	▨	18 D	R	I	N	K	▨	▨	S	▨
19 V	E	G	E	T	A	B	L	E	S	▨	▨

GOLDILOCKS UP-TO-DATE

Once upon a time a little girl by the name of Goldilocks wandered through the woods in search of adventure. She passed beautiful wild flowers and walked around and around among the trees until she came to a clearing where she found a patch of wild strawberries. She stopped to eat some because, like (1) ______________ and (2) ___________ they were a good source of Vitamin ______________.

The day was ideally warm, the sky blue and the sun shining brightly, so Goldilocks removed her sweater. Exposing her arms to the sun gave her a better chance to acquire more Vitamin __________ so necessary for the protection of (5) ____________.

After eating all the ripe strawberries, Goldilocks noticed a walnut tree nearby, and beneath it found some nuts from the previous fall. She put one on a big rock and cracked it. It tasted better than those from mother's pantry and at the same time gave her (6) _________ for building and repairing body tissues.

Goldilocks had seen enough of this part of the woods and decided to wander farther on. Before long she came to a quaint little house made of wood slabs and somewhat hidden by the surrounding shrubs and trees. She peeked into the window and seeing no one, slowly opened the door. She entered a kitchen and on the table discovered three bowls of soup. She tasted the largest bowl and said, "The vegetables in this soup will give me (7) ____________ to promote growth and prevent disease, but this soup is too hot."

She tasted the cream of tomato soup in the middle size bowl and said, "This should give me (8) __________ to build strong bones and teeth, but it's too cold for me." Finally she tasted the soup in the little bowl and ate every last bit because it was just right.

Then to help make her teeth strong and white she decided to drink a glass of (9) __________. This contained the minerals (10) __________ and (11) __________ which together with the Vitamin (12) __________ from the sunshine, formed a three-man team that enabled these foodstuffs to be utilized in the body to the best advantage.

Goldilocks's next move was to look in the table drawer. Here she found a box of nails and said "These contain (13) __________ but I can't eat it in this form. Perhaps the refrigerator will have (14) __________ __________ or (15) __________ to give me this mineral."

Poor Goldilocks. She was just eating the last bite of bread when she heard a noise at the door. She peeked through the window and saw bears. Three of them.

A large bear, a medium-sized bear and a little baby bear were opening the door just as Goldilocks jumped out the window. She landed on all fours, and when she stood up to run away she discovered that her left hand had been cut by a piece of glass. She held the cut with her other hand and it soon stopped bleeding, because her blood contained enough Vitamin (16) __________ to help it coagulate quickly.

Goldilocks arrived home with no appetite for the good dinner her mother had waiting. We know the reason, don't we?

Use these words to fill in the blanks in the preceding story.

Vitamin K

milk

dried prunes, apricots

calcium

raisins, dates

Vitamin A

iron

protein

Vitamin B

rickets

Vitamin D

Vitamin C

phosphorous

grapefruit

calcium

oranges

RECIPES FOR NUTRITIOUS SNACKS

Honey-Sesame Bites (Hewitt, Jean. New York Times Natural Foods Cookbook, New York: Avon Books, 1971, p. 375.)

2 egg whites, room temperature	1/2 c. unsweetened shredded coconut
3/4 c. sugar	1 tbsp. rice polishings (optional)
2 tbsp. honey	1/2 tsp. vanilla
1 c. wheat germ	1/2 c. sesame seeds

1. Preheat the oven to 325 degrees.

2. Beat the egg whites until soft peaks form. Gradually beat in the sugar and then the honey until mixture is very stiff and holds stiff peaks.

3. Fold in the wheat germ, coconut, rice polishings and sesame seeds. Stir in the vanilla.

4. Drop mixture by the teaspoonful onto a buttered and floured baking sheet. Bake for about 20 minutes or until lightly browned.

YIELD: About 3 dozen

Sunshine Shake (Illinois Teacher, XIX (4): 253, 1976.)

1 banana, cut up
1-1/2 c. orange juice
1/2 c. crushed pineapple
1 tbsp. lemon juice
1-1/2 c. water

Mix all ingredients in a blender. Chill. Pour into cups and serve.

YIELD: 4 cups

To make without a blender: mash ripe banana well, use pineapple juice instead of crushed pineapple, mix well with an egg beater, or shake.

292

Peanut Butter and Oatmeal Cookies

1/2 c. margarine, soft
1/2 c. peanut butter
3/4 c. firmly packed brown sugar
1/2 c. sugar
1 egg
1 tsp. vanilla
1/2 tsp. soda
1-1/4 c. flour
1/2 tsp. salt
3/4 c. oatmeal, quick cooking

Beat together the margarine, sugars, peanut butter, egg and vanilla until creamy. Add the flour, soda, and salt. Add the oatmeal to creamed mixture.

Shape into 1-inch balls, flatten with a fork onto greased cookie sheet. Bake at 350 degrees for 12-15 minutes.

YIELD: 3-1/2 dozen

Guacamole

(Hewitt, Jean. *New York Times Natural Foods Cookbook*, New York: Avon Books, 1971, p. 9.)

2 ripe tomatoes, diced
1 ripe avocado, peeled, pitted and mashed with a fork
1 small onion, finely chopped
1 small green pepper, diced
1-2 tsp. lemon or lime juice
celery sticks and carrot sticks
Other dippers: fresh vegetables, doritos, corn chips, etc.

Combine all the ingredients except celery and carrot dippers. Serve at once with the dippers.

YIELD: 6 servings

Bran Oatmeal Muffins

1 c. boiling water
1 c. all-bran cereal (or bran buds)
1-1/2 c. sugar, white or brown or half each
1/2 c. shortening
2 eggs
1/2 quart buttermilk
2-1/2 c. flour
1/2 tsp. salt
2-1/2 tsp. baking soda
2 c. uncooked oatmeal

Pour water over bran and set aside while mixing other ingredients. Cream shortening and sugar, add eggs, buttermilk, flour, salt and soda. Add bran and oatmeal. Pour into well-greased muffin tins until 2/3 full (or use paper liners). Bake at 375 degrees for 15-20 minutes. You can use part of this mix and set the rest aside in the refrigerator and use at a later date. If using batter from refrigerator, bake for 20-25 minutes.

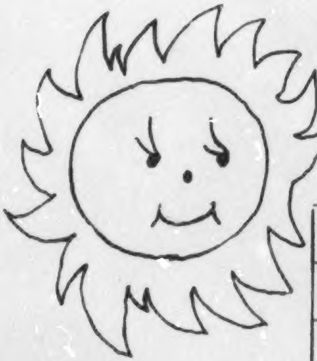
YIELD: 2 dozen

YOU CAN Score WITH Super Snacks

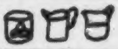
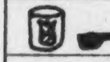
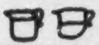
Most of us like snacks. Some snacks have lots of calories and not much else--like pop and candy; other snacks can be fun to eat and still give us other nutrients our bodies need. Why not try some of these with your friends? You may like to keep snack foods handy in your refrigerator and on your shelf.

- Oranges, or sections
- Bananas
- Apples, or wedges, slices
- Peaches
- Watermelon
- Cantaloupe
- Green pepper rings
- Cherry tomatoes
- Turnip slices
- Carrot sticks, curls or circles
- Raw broccoli & cauliflower "flowers"
- Celery sticks
- Raisins, prunes
- Dates
- Dried apricots
- Cereals (unsugared types)
- Deviled eggs
- Cheese cubes, wedges
- Fruit juices- orange, pineapple, apricot, cranberry, grapefruit, tomato
- Milk, including low-fat or skim
- Cocoa
- Ice cream

Milk with - orange or pineapple juice
- crushed strawberries or raspberries
- crushed ripe banana
- honey & peanut butter



Sunshine Shakes

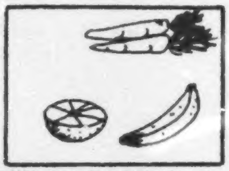
FOR 4 CUPS	I WILL NEED...
1 banana, cut up	
 1-1/2 cups orange juice	
 1/2 cup crushed pineapple	
1 tablespoon lemon juice	
 1-1/2 cups water	
Mix well in blender. Chill. OR Mash banana well. Use pineapple juice instead of crushed pineapple. Mix well with egg beater.	

More • Super • Snacks

- Peanut butter with
  - raisins or dates
  - apple or banana slices or applesauce
  - chopped celery or shredded carrots
  - graham crackers
  - nonfat dry milk and honey
- Open-faced sandwiches with leftover ham, chicken, beef
- Toasted enriched English muffins topped with ham or tuna salad & slice of cheese. Broil to melt cheese
- Tiny meat balls on tooth picks
- Cheese sticks wrapped with chipped meats
- Whipped cottage cheese dip with onion soup mix
- Cheese balls--form softened cheese in balls, dip in nuts
- Tuna or tuna salad
- Assorted crackers
- Nut bread with cheese spread
- Nuts & raisins
- Milky Way Soups (add nonfat dry milk with water for more flavor and nutrition)
  - tomato
  - vegetable
  - potato
  - split pea
- Granola
- Celery stuffed with peanut butter, ham salad, cheese spread
- Bread sticks--roll refrigerator biscuits into sticks or any shape desired, brush lightly with melted oleo, sprinkle with garlic salt, oregano, or parmesan cheese
- Pizza
- Tacos
- Tomato wedges with tuna or hard cooked egg
- Soft cheese or cream cheese with
  - bacon bits or nuts
  - deviled ham or chipped beef
  - apple wedges or celery
- Fruit kabobs-banana wheels, pineapple chunks, cherries, strawberries, orange wedges on picks--make your own
- Cottage cheese with fruit--add a dash of cinnamon or nutmeg
- Yogurt with fruit
- Ice cream in milk shakes, with fruit, with nuts, or make-your-own sundaes
- Homemade popsicles or frozen cubes of fruit juices or flavored gelatin
- Hot spiced cider or pineapple juice with cloves or cinnamon
- Cookies--peanut butter, oatmeal, raisin

NAME A SNACK

From the list of snacks in this book - or other snacks- name some you would like to try. Choose some from each food group.

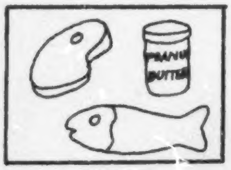


FRUIT & VEGETABLE

____

____

____

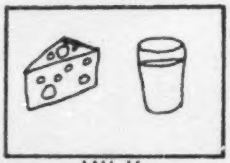


MEAT

____

____

____

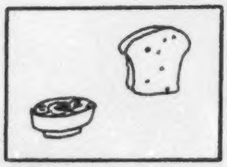


MILK

____

____

____



BREAD & CEREAL

____

____

____

Reprinted with permission from Illinois Teacher, Hazel Spitze, Editor.

WORKSHEET II

INSTRUCTIONS: Fill in the blanks in the following statements to make them complete and true sentences.

1. Eating a well-__________ diet means eating well-balanced __________ to keep you in good physical and mental health.

2. Along with eating a well-balanced diet, it is important to get enough _____________ to keep your body physically fit and to help avoid a build-up of fat on the body.

3. The body uses food for (1) __________ and _________________ (2) __________ of body processes and (3) supplying __________ and __________ to keep it going.

4. __________ are body builders that help you develop strong muscles and good posture, and are what bones and body tissue are chiefly made of.

5. __________ and __________ help to give you a clean healthy complexion.

6. A ____________ supplies energy to the body, and is a unit to measure the energy value of foods.

7. Tiredness or fatigue is a common symptom of one who has ________, resulting from a lack of iron.

8. The way you look and feel is a result of your __________.

9. ______________ are a good way to increase the nutritional value of your daily food intake.

10. Name five nutritious snacks.

11. __________ and ____________ charts are only guidelines to a range of weight that is considered normal for your age and height. They do not mean that you must necessarily fall into the range or you're considered underweight or overweight.

12. An excellent food for hard, well-developed teeth is __________.

13. Name three sources of iron that help prevent _________________.

14. The vitamin that is necessary for good vision and night vision is ______________.

296

15. Eating lots of sugary and sweet foods may lead to problems with your __________, especially causing __________.

16. Exercise is an important part of __________ __________________.

17. ___________ regulates the body temperature, aids in digestion and carries waste materials from the body.

18. ___________ refers to the meals you eat regularly.

19. ___________ of needed protein, carbohydrate, fat, vitamins and minerals will result in symptoms that will affect your personal appearance and health.

20. Vitamin __________ is needed to prevent bones from becoming fragile, gums and teeth from becoming soft and bleeding easily and wounds from healing poorly.

21. The skin and pulp of fruits contain ___________ which the body cannot digest, but which serves as a natural laxative and helps maintain body regularity.

22. ____________ or Vitamin B, is needed for growth, good appetite, healthy nerves and good body coordination, and to help the body release energy from carbohydrates.

23. Besides calcium, another important mineral needed for good strong teeth is ___________.

24. Name some good sources of calcium and phosphorus.

25. Some meat contains less fat than other kinds. name three protein sources of meat that are low in fat, and therefore have fewer calories and are better for you.

26. Empty ___________ provide no protein, vitamins or minerals to the body.

27. The texture, fullness and lustre (or lack of lustre) of your hair is a result of your ____________.

28. Fruits and vegetables are quick, easy and __________ snacks.

29. The best way to reduce your weight is to just cut down on the _______________ of foods you eat and continue to choose a sensible amount of food from the Basic 4 food groups.

30. _____________ is found in fruits and vegetables and is the portion of food that is indigestible.

WORKSHEET II

Answer Key

1. Balanced; meals

2. Exercise

3. Growth and repair; regulation; energy and heat

4. Proteins

5. Vitamins and minerals

6. Calorie

7. Anemia

8. Diet or food habits

9. Snacks

10. Raisins
    - apples
    - oranges
    - nuts
    - yogurt
    - fruit
    - unsugared cereals
    - fruit juices
    - milk and cheese
    - ice cream
    - raw vegetables
    - peanut butter

11. Height-weight

12. Milk, calcium

13. Raisins and dates, dried prunes and apricots, liver, egg; anemia (any food that contains iron is acceptable)

14. Vitamin A

15. Teeth or dental health; cavities

16. Weight control

17. Water

18. Diet

19. Deficiencies or a diet deficient

20. Vitamin C

21. Cellulose or fiber

22. Thiamin

23. Phosphorus

24. Lean meats, fruits, cheese, milk

25. Chicken, turkey, fish

26. Calories

27. Diet

28. Nutritious

29. Quantity or amount

30. Fiber or cellulose

GAME II

OBJECTIVES: At the end of this week, the students should be able to:

1. State health problems related to nutritional deficiencies.
2. State ways to correct nutritional deficiencies to improve health.

INSTRUCTIONS: Read the following questions and answer true or false. If the answer is false, discuss why it is false, and state the sentence to make it a true statement.

****

ANSWERS

B-1	T
B-2	T
B-3	T
B-4	F; some of them are enriched and fortified
B-5	T
B-6	F; some foods are good sources of several
B-7	T
B-8	T
B-9	F; Vitamin A
B-10	T
B-11	F; it does matter; drink skim or nonfat
B-12	T
B-13	F; made of protein
B-14	T
B-15	F; is related
B-16	F; water is needed
B-17	T
B-18	T
B-19	T
B-20	T
B-21	T
B-22	T
B-23	F; water aids in
B-24	F; contain less
B-25	T
B-26	F; provide no nutrients
B-27	T
B-28	T
B-29	F; milk is a good
B-30	F; are dangerous and not safe

GAME II

Foods that are low in sugar and fat make good snacks. B-1	Sugar and starch are carbohydrates. B-5
The way you eat directly affects the way you look and feel. B-2	One food can be a good source of only one nutrient. B-6
Nutritious foods are foods that provide needed nutrients to the body, not only calories. B-3	Americans need to eat more carbohydrates in the form of fruits, vegetables and whole grains instead of carbohydrate foods that are all sugar. B-7
Foods are never enriched or fortified by food processors. B-4	In areas of the world where Vitamin A intake is low, severe eye diseases are a problem. B-8

"Night blindness" is a common deficiency disease of Vitamin D.

B-9

Many popular store bought cereals contain a large quantity of sugar, and therefore are not good breakfast foods.

B-10

Since only whole milk contains fat and skim or nonfat milk doesn't, and has fewer calories, it doesn't matter which one you drink if you want to lose weight.

B-11

Weight is best controlled by watching the foods you eat and getting regular exercise.

B-12

Bones and body tissues are chiefly made of carbohydrates.

B-13

Vitamins and minerals help you to have a clear, healthy complexion.

B-14

The way you look and feel is not related to your dietary habits.

B-15

Water is not needed by the body since it contains no nutrients.

B-16

Skin and pulp of fruits contain cellulose which cannot be digested by the body and which serves as a natural laxative to maintain body regularity. B-17	The word "diet" refers to the meals you eat regularly. B-21
Phosphorus is another mineral needed along with calcium for strong teeth. B-18	Tiredness and fatigue are common symptoms of anemia. B-22
Anemia is a result of a diet deficient in iron. B-19	Food aids in regulation of body temperature, digestion and carries food waste from the body. B-23
Vitamin A is needed for good night vision. B-20	Chicken, turkey and fish contain more saturated fat than red meats. B-24

Eating a well-balanced diet means you are eating well-balanced meals to keep you in good physical condition and mental health.

B-25

Empty calories provide several nutrients needed by the body.

B-26

Excess weight increases your chances of heart disease, diabetes and fatigue.

B-27

A good way to increase the nutritional value of your diet is to eat nutritious snacks instead of junk food.

B-28

Meat is a good source of calcium and is needed for proper teeth development.

B-29

Fad diets are all safe and cannot endanger good health.

B-30

WEEK III
NUTRITION LABELING AND HEALTH FOODS

Instructor's Notes:

Before beginning this week's classes, become familiar with the information in the Leader's Guide to Label It Nutrition*.

DAY ONE
1. Introduce the week's topic and the Label It Nutrition filmstrip. Free discussion should be allowed to follow each slide. Try to draw on personal experiences for discussion.
2. Ask students to bring in one or two nutrition labels from products they have at home to look at and discuss tomorrow. The teacher may wish to start a collection to show the students.

DAY TWO
1. Hand out Label It Nutrition workbooks to each student.
2. Read first two pages with students.
3. Have students complete the workbooks in their groups.
4. Pass around nutrition information labels brought in.

DAY THREE
1. Discussion of health foods and evaluation of nutrition information. Health foods and health food stores are so popular today that it is important for everyone to know something about them. It is the consumer's responsibility not to be misled by false claims concerning nutrition. Discuss the following issues concerning health foods with the students:
    a. Natural foods--these foods are not supposed to contain any additives; they should be all-natural foods. Additives are things such as preservatives, emulsifiers, artificial flavorings and colorings.
    b. Organic foods--this refers to foods that have been grown without the addition of inorganic or so-called "chemical" fertilizers. Nothing has been placed on the food while it is growing, such as pesticides, insecticides and fertilizers.
2. Are natural foods and organic foods better purchases than regular foods sold in supermarkets that don't claim to be "natural" or "organic"?

    These foods (natural and organic) are usually more expensive than standard food items and are more easily found in health food stores than in typical supermarkets. It is not necessary to buy these foods if you select foods properly when shopping and eat a balanced diet. Regular foods usually contain the same amount of nutrients as health foods. It is not worth the extra money you have to spend on many health foods for the products you get in return. Buy fresh foods whenever possible, read ingredient labels to look for additives, choose foods that contain few or no additives and thoroughly rinse fresh foods before cooking to remove any additives that might be on the surface of the food.

3. Should you take vitamin pills? Are synthetic vitamins different from natural vitamins?

   First, there is *no* difference between synthetic vitamins and natural vitamins in the way they function in the body. The only difference is in their *price*. Natural vitamins are usually sold at higher prices (many times higher!) than synthetic vitamins; therefore, if you do take vitamin pills, it is not necessary to take "natural" vitamins. Second, if you eat a balanced diet and carefully choose your foods each day to try to meet your RDA, then there is no need to take additional vitamins. A balanced diet will furnish all the nutrients a normal, healthy person needs. Certain vitamins, most of the water-soluble vitamins, cannot be stored in the body. Therefore, if you eat a balanced diet plus take vitamin pills or capsules, the amount in excess that is taken in over your body's requirements will be excreted. On the other hand, the fat-soluble vitamins are stored in the body, and repeated large intakes can lead to *hypervitaminosis*, a condition caused by excessive intakes of a vitamin, particularly Vitamins A and D.

4. Discuss the mounds of books on the market about dieting, health foods, nutrition, etc. Many people believe everything they read, and this should be guarded against when it comes to books concerning these topics. A critical eye can quickly spot books that are likely to convey misinformation. Read over the attached paper with the students--Criteria for Evaluating Nutrition Information--and discuss. Emphasize the following:
   a. Many people and organizations write and promote books to help sell a product or an idea. This usually results in benefits to themselves, e.g., fame or profits from increased sales on books and products.
   b. If the authors are doctors, either Ph.D.'s or M.D.'s, it does not necessarily mean that they know what they are talking about in regard to nutrition, and that everything they have written is true. Many people believe the title implies that the authors are expert in any field. Before buying a book, look at the attached guidelines and review the book. Also, always check the credentials of an author, e.g., where the degree was received, what field the degree is in and other publications.

DAY FOUR

1. Review topics covered orally this week with students.
2. have students get into teams to prepare the next day's tournament.
3. Hand out Worksheet III and let teams practice.

DAY FIVE

1. Follow directions for Week I, Day Five, using Game III.

SOME SUGGESTIONS FOR EVALUATING WRITTEN NUTRITION INFORMATION

1. Books or articles that promote certain foods or diets as having "miraculous" properties or as being "wonder" foods should be questioned for reliability. Also question books that claim certain foods have medicinal qualities or are elixers. Claims such as these are not true.

2. Do not always believe everything you read just because the author is an M.D. or a Ph.D. Many times people write books about nutrition hoping they will sell and make a profit. Also, M.D.'s do not always have a sound background in nutrition and are not qualified to be writing books about nutrition.

3. Avoid books that promise a cure through dietary treatment for an ailment for which medical science has no cure. Examples of books offering such advice include ones written on arthritis, cancer, sterility and heart disease. Many books also promote the use of megadoses of vitamins to cure physical and mental problems. Avoid these.

4. Use your common sense! Use your knowledge about nutrition to judge books written on nutrition. Ask yourself if what the book states agrees with what you know about how the body digests, absorbs and metabolizes food. For instance, you should know that it is impossible for any food to move around your body fat and deposit it wherever you want it (a claim which has been made in a book about nutrition). Books you should evaluate carefully are those found in health food and similar type stores.

*Label It Nutrition. The National Dairy Council, Rosemont, Illinois

WORKSHEET III

THE FOOD FAD BAG

1 A The phrase health foods may refer to natural foods and organic foods, or it may refer to dietetic foods.

1 B Some people and organizations write articles, books and pamphlets that benefit themselves in some way.

1 C Natural foods claim to contain no additives such as preservatives, emulsifiers, artificial flavorings and colorings.

1 D Organic-labeled foods are usually less expensive than standard foods.

1 E Organic foods are foods grown without the addition of inorganic or so-called "chemical" fertilizers.

1 F Natural vitamins are better than synthetic vitamins.

1 G We can get all the trace minerals we need (zinc, copper, magnesium, iron, etc.) simply by eating a variety of foods each day.

1 H It is better to spend the extra money for health foods to insure proper nutrition, than to buy the same product for less money in grocery stores.

1 J Extra vitamins give you extra pep and energy.

1 K All health foods are organic.

1 L Ingredient listing not only tells you what is in a packaged product, but also allows you to compare products.

1 M Some food labels do not have a list of ingredients because they meet the "standard of identity" which is a standard recipe set up by the FDA.

1 N FDA stands for Food and Drink Administration.

1 O Ingredient information on foods that do not have labeling can be obtained by writing to the manufacturer or the FDA.

1 P Following the serving size, the number of servings is listed under the nutrition information label.

2 A If a doctor (Ph.D. or M.D.) has written an article endorsing a food product, you know it is true because it was written by a doctor.

2 B RDA stands for Recommended Dietary Allowances and is required by law to be included on all food labels.

2 C It is a good idea to check the credentials of an author who writes about nutrition and foods before believing everything he or she writes.

2 D FDA, along with several other agencies, controls the safety and regulation of foods available to the consumer.

2 E Food manufacturers use advertising gimmicks to push their products, even when they are nonnutritious and can even be harmful to the body.

2 F Food labels may vary, but certain information is required to be on all of them, such as (1) identity of the product (2) net content or net weight (3) name and place of business of the manufacturer, packer or distributor and (4) list of ingredients.

2 G Ingredients are listed in descending order of predominance by weight on food labels.

2 H According to FDA regulations, nutrition information must appear on the label when nutrients have been added to a food, or when the manufacturer makes claims on the label or in advertising.

2 J When a food label includes nutrition information, five leader nutrients must be listed in the same order: protein, Vitamin A, Vitamin C, thiamin and riboflavin.

2 K The new food labels are of no benefit in choosing and serving foods that are nutritious and appetizing, or in buying food more wisely.

2 L The "pull date" is the date after which a product should not be sold.

2 M When a food is purchased on the "pull date," the product will retain its freshness for several days after purchase.

2 N Nutrition labels show you the grams of protein per serving in the food.

2 O Small percentage differences are significant when you choose foods for the percentage of a nutrient they contain.

2 P Nutrition labeling can be used not only to compare the nutritional quality of a food, but also to determine which food is the best buy for your money.

WORKSHEET III

THE FOOD FAD BAG

Answer Sheet

ONE (1)

A. T

B. T

C. T

D. F; they are usually more expensive

E. T

F. F; both are the same

G. T

H. F; spending extra money for foods in health stores is unnecessary

J. F; taking extra vitamins is also unnecessary

K. F; all health foods are not organic

L. T

M. T

N. F; Food and Drug Administration

O. T

P. T

TWO (2)

A. F; they may not have backgrounds in nutrition

B. F; not required on all food labels

C. T

D. T

E. T

F. T

G. T

H. T

J. F; 8; also niacin, calcium and iron

K. F; they do benefit you in these ways

L. T

M. T

N. T

O. F; are not significant (you can allow 5 percent either way)

P. T

GAME III

OBJECTIVES: At the end of this week, students should be able to:

1. Explain nutrition information labeling.
2. State the points of information found on food labels.
3. State reasons for not following fad diets.
4. Define health foods, both natural and organic.

INSTRUCTIONS: Read the following statements and answer true or false. If the statement is false, reword the sentence to make it true.

****

ANSWERS

C-1	F; they are the same
C-2	T
C-3	T
C-4	T
C-5	T
C-6	F; not all, just some
C-7	F; natural foods claim to ...
C-8	F; organic foods refer to ...
C-9	F; usually more expensive
C-10	T
C-11	F; not all food labels
C-12	T
C-13	T
C-14	T
C-15	T
C-16	F; given in percentages
C-17	T
C-18	T
C-19	T
C-20	T
C-21	T
C-22	F; grams per serving
C-23	T
C-24	T
C-25	T
C-26	T
C-27	F; they do provide calories
C-28	F; some labels carry this information, but it is optional
C-29	T
C-30	T

GAME III

Natural vitamins are better than synthetic vitamins. C-1	Food manufacturers use advertising gimmicks to promote their products, whether they are nutritious foods or not. C-5
Some people and organizations write articles that benefit them, but are not necessarily true. C-2	Health foods are all organic. C-6
The labels on food products are an important guide to choosing and serving nutritious foods. C-3	Organic foods claim to contain no additives such as preservatives, emulsifiers or artificial flavorings. C-7
The phrase health foods may refer to natural foods and organic foods, or it may refer to dietetic foods. C-4	Natural foods refer to foods grown without the addition of inorganic or so-called "chemical" fertilizers. C-8

Foods labeled organic are usually less expensive than standard foods.

C-9

FDA (Food and Drug Administration) is one agency that helps regulate the safety of foods available to the consumer.

C-10

RDA stands for Recommended Dietary Allowances, and is required by law to be included on all food labels.

C-11

The new food labels contain nutrition information per serving in a standard format.

C-12

According to FDA regulations, nutrition information must appear on the label when nutrients have been added to the food.

C-13

Leader nutrients that must be listed under nutrition information on food labels include protein, Vitamin A, Vitamin C, thiamin, riboflavin, niacin, calcium and iron.

C-14

Serving size and servings per container are both listed under nutrition information.

C-15

The RDA is given in grams on the nutrition information label.

C-16

Using nutrition information labeling can help you shop for foods economically by comparing food labels.

C-17

A gram is a unit of weight. It takes about 30 grams to equal 1 ounce.

C-18

Ingredients are listed in descending order of predominance by weight on lists of ingredients.

C-19

The RDA represents the quantities of nutrients considered necessary to maintain the nutritional well-being of almost all healthy people.

C-20

Identity of the food, net content or net weight, name and place of the manufacturer, packer or distributor, and a list of ingredients are required to be on all food labels.

C-21

Protein, carbohydrate and fat are stated in ounces per serving.

C-22

In general, a food that contains 15 percent or more of a nutrient can be considered a good source of that nutrient.

C-23

Protein, carbohydrate and fat all provide calories as well as nutrients.

C-24

Even small amounts of nutrients in foods contribute to the total daily intake.

C-25

Most labels carry percentages that apply to adults and children over 4 years old.

C-26

Protein, carbohydrate and fat do not provide calories.

C-27

Nutrition labels never carry information regarding composition of fat, amount of cholesterol and amount of sodium.

C-28

Meat, fish and eggs--even if not labeled--supply protein, niacin, iron and thiamin.

C-29

On nutrition information labels, the serving size is listed in familiar household measurements like cups, teaspoons or tablespoons, or in amounts normally eaten (slices).

C-30

WEEK IV
MEAL PLANNING AND PREPARATION

Instructor's Notes:

DAY ONE

1. Introduce this week's topic--Meal Planning and Preparation. Emphasize the importance of proper planning and preparation of food on better eating habits and improved nutrition. Attractive food appeals to the senses and stimulates the appetite. The nutritive quality of food is greater when it is cooked properly for the appropriate length of time. Discuss: broiling, baking, roasting, frying and braising.
    a. Discuss eating patterns, menus and meal planning.
        1) Define: breakfast, lunch, dinner/supper and brunch.
        2) Define: menu--a list of the foods to be served at a meal. Have students give examples and write on the board. CREATIVITY and VARIETY are important in menu planning. The following should be considered when planning a menu: nutrient value of the foods; color, shape and size of the foods (give examples); texture of the foods (give examples); temperature of the foods (give examples); flavors--the four "tastes" we experience are salty, sweet, sour and bitter.
        3) Careful planning and meal preparation schedules are necessary for good meals:
        Planning--consider all factors above.
        Meal preparation schedule--take menu and look at recipes (define--a set of instructions stating exactly what is needed to prepare a dish). Note times needed to prepare foods and arrange a time schedule to determine exactly when to begin each dish. Start with ones that take the longest and finish with ones that can be prepared immediately before the meal.
        Host--man who entertains and receives guests; also carves meat and serves main course.
        Hostess--woman who entertains and receives guests; may serve salad, dessert and beverages.
        4) Other important factors include:
        Time--do you have time to prepare the food; how long does food preparation take; when do you need to be available to prepare the food?
        Money--determine foods that fit into your budget. Those that are home prepared usually cost less than commercially prepared (frozen, for example) foods or dinners.
2. Hand out Hidden Word Puzzle and let students complete.

DAY TWO

1. Discuss proper table settings with the students.

Dishes--explain uses of:
- dinner plate
- salad bowl/plate
- bread and butter dish/plate
- glassware
- cup and saucer

(Show examples of each, and complete a table setting, talking about it.)

Flatware/Silverware--explain uses of:
- knife
- spoons--dinner and soup
- forks--dinner and salad
- butter knife

Show examples of properly set tables, with either pictures or drawings on the board, going from simple everyday place settings to more formal settings. Classroom demonstrations are also recommended.

Discuss:

Linen--covers table, adds to attractiveness of meal.

Placemats--used under place settings to protect table or liner.

Napkins--folded and placed under fork(s).

Place setting--dishes, glassware and flatware at one seat that are needed to eat the meal.

Table setting--includes all china, flatware/silverware, glassware and linen/placemats required for one person.

2. Hand out the "Place Settings" activity sheet. Have students complete. Look at students' drawings.

DAY THREE

1. Stress that good meal planning centers around the Basic 4 food groups. A day's menu should include all the recommended servings from the four groups. With proper meal planning, good eating habits are encouraged through a balanced diet, and between meal snacking is discouraged. Tie in this concept with everything that has been discussed this week. Use examples.
2. Hand out a "Menu Evaluation" sheet to each team. Students should evaluate all the menus by answering the questions, crossing out foods and adding foods to the meals if necessary. Have class discussion so students can contribute their ideas and suggestions.

DAY FOUR

1. Review orally with the students the importance of this week's lesson.
2. Hand out Worksheet IV to the teams to prepare for the tournament.

DAY FIVE

1. Follow directions given for Week I, Day Five, Using Game IV

FIND THE WORDS

The following hidden word puzzle contains words associated with meal planning and preparation. See how many you can find (HINT: there are 31) before you look at the list of words that are hidden.

The words may be going up, down, forward, backward or crosswise.

N	A	L	P	Y	T	E	I	R	A	V	T
S	U	N	E	M	K	L	N	L	A	E	M
R	Z	T	E	X	T	U	R	E	D	T	O
O	W	P	R	E	P	A	R	E	R	E	N
L	I	Q	U	I	D	E	D	R	Y	E	E
O	D	C	O	G	T	M	T	V	O	W	Y
C	R	U	N	C	H	I	N	E	S	S	E
S	E	H	S	I	D	T	O	H	J	M	P
C	R	I	S	P	L	S	O	U	R	O	A
Y	F	L	A	V	O	R	X	T	S	O	H
A	T	T	R	A	C	T	I	V	E	T	S
T	L	A	S	S	E	N	I	W	E	H	C
M	E	A	S	U	R	E	M	E	N	T	S
R	E	T	T	I	B	R	E	C	I	P	E

The following words are hidden above:

plan
prepare
time
money
recipe
meal
salt

variety
texture
crisp
chewiness
smooth
measurements
dishes

crunchiness
hot
cold
liquid
dry
menu
shapes
sour

attractive
color
flavor
host
good
sweet
bitter

WOULD YOU KNOW HOW TO SET THE TABLE IF ...

If you had planned the following meals, how would you set the table? Read the meal menus below and draw a picture of all the items necessary to properly set the table for each of the dinners. Be sure to include everything necessary to eat the foods easily and gracefully.

1. Tossed salad with dressing
   Peas and carrots
   Hard roll with margarine
   Baked potato with sour cream
   Roast beef slices
   Fruit compote for dessert
   Glass of water

2. Coleslaw with fruit slices
   Vegetable and beef soup
   Grilled cheese sandwich
   Glass of milk
   Cup of coffee

3. Glass of orange juice
   Bacon
   Toast with margarine
   Eggs
   Glass of water

4. Cup of onion soup
   Lettuce, tomato, asparagus salad plate
   Brussel sprouts
   Mashed potatoes with gravy
   Fried chicken
   Roll with margarine
   Apple pie for dessert
   Glass of water
   Cup of coffee

MENU EVALUATION

Now that you have examined the Basic 4 food groups, nutrition related to physical appearance and nutrition labeling, you will now take a look at meal planning and preparation. Taking everything you have learned in the past 3 weeks into consideration, look at the following menus and evaluate them for meeting the requirements of the Basic 4, for being wholesome, nutritious foods, and for their attractiveness, variety, texture and shape.

If a menu is lacking in one of the Basic 4, write it down under the questions at the bottom of the page. Then beside the meal, write in food(s) you would add to the day's plan to add that food group. If there are too many of some foods planned for a day (too many sweet desserts!), then cross them out, and if desired add a food you think would be better to eat. If the meal contains too many foods that are all the same shape or texture, taking away from its attractiveness, then substitute foods you think would enhance the meal's appearance.

Be as clever and creative as you wish! The people you serve will appreciate the meal you have planned and prepared more. Eating should be an enjoyable, healthy experience for you and your guests. The appearance of food is important, and for many people, stimulates the appetite. Planning meals properly encourages hearty, nutritious eating habits and makes eating interesting and fun at the same time.

MENU I

Breakfast
toast with peanut butter and jelly
orange juice
hot tea

Lunch
sandwich: bread, bologna, mustard, lettuce
carrot and celery sticks
sugar cookies
soda

Dinner
hamburger, roll, mustard, relish
corn
string beans
dill pickle and olives
chocolate cake with frosting
water

Questions:
1. What basic food group is missing?
2. How could you add it to the meals to meet the RDA?
3. Circle two items that are not nutritious foods. Why? What could you substitute in their places to make the day's menu even more nutritious?

MENU II

Breakfast
oatmeal with milk
poached egg
grapefruit juice

Lunch
chicken-noodle soup
crackers and margarine
hot creamy cauliflower
hot chocolate milk

Dinner
hamburger patties
home fried potatoes
sliced carrots
lettuce with sliced tomatoes
apple or orange
milk

310

Questions: 1. Are any of the Basic 4 foods missing?

2. How could you make this menu have a more pleasing appearance?

MENU III

Breakfast
glazed donuts
chocolate milk

Lunch
sandwich: bread, peanut butter, jelly
potato chips or corn chips
chocolate chip cookies
soda

Dinner
roast beef slices
mashed potatoes and gravy
fruit jello salad
sweet rolls with margarine
sweet pickles
asparagus
apple pie a la mode
Kool Aid

Questions: 1. Are any essential food groups missing? If so, which one(s)?

2. Which foods are essentially "empty calorie" foods?

3. What foods would you substitute for the less nutritious foods in this menu?

MENU IV

Breakfast
Raisin Bran cereal with milk
orange juice
cheese or cottage cheese

Lunch
sandwich: whole wheat bread, bologna,
cheese, lettuce, tomato, mustard
pepper and carrot sticks
apple and raisins
milk

Dinner

roast chicken
baked potato with margarine
broccoli
tossed salad with lettuce, tomato, cucumber, onion, salad dressing
fresh fruit salad: sliced apples, bananas, oranges, melons and other fruits in season
water
iced tea with lemon

Questions:

1. Is there anything wrong with this menu?
2. State your reasons for answering either yes or no to question 1.
3. How many servings of the four food groups are included in this menu?

   Meats ______________ Fruits and vegetables ________
   Dairy products ______________ Breads and cereals ___________

WORKSHEET IV

Instructions: Fill in the blanks in the following sentences to complete the statements.

1. A __________ is a group of foods served as a meal.

2. The ________ is the way foods feel to the tongue when eaten.

3. The __________ __________ __________ were determined by the Food and Nutrition Board of the National Research Council within the National Academy of Science.

4. The RDA's are listed according to __________ and ____________; in this way, adjustments in the ____________ allowances are made to meet the demands of different growth periods.

5. ______________ is the first meal of the day.

6. ______________ is a moderately heavy meal served at noon.

7. ______________ is the largest meal of the day and is served in the evening.

8. _____________ and _____________ put into a meal may be determined by the foods you select and the food forms you buy.

9. Pleasing combinations of foods add _____________ to a meal and stimulate ______________________.

10. _____________, ______________, ________________ and ______________ add variety and attractiveness to a meal.

11. A ________________ is a man who entertains and receives guests; also, he may carve meat and serve the main course of a meal.

12. A ________________ is a woman who entertains and receives guests; Also, she may serve salad, dessert and beverages at a meal.

13. Meal _______________ begins with a menu.

14. A meal preparation ________________ helps you arrange your activities to prepare a meal efficiently and to know exactly when to start each food so that everything will be ready to serve at the same time.

15. A ____________ __________ includes all the silver, china (dishes), glassware and linen required for one person.

16. The principles of table setting provide for __________________ and ________________ to each person at the table.

17. The ______________ are placed to the left of the dinner plate.

18. The ____________ and ______________ are placed to the right of the dinner plate.

19. The ______________ is placed to the left of the fork(s) and is used to protect your clothes, to blot your mouth and wipe your fingers when soiled at the table.

20. In preparing a meal, you begin with foods that take the ________________ to cook, and finish up ________________ before dinner with those foods that need little or no preparation.

21. A ______________ is the food served at the same time within a meal.

22. Foods rich in ____________ and ______________ are not included in the Basic 4; they are rich in calories, but provide almost no vitamins, minerals or proteins.

23. There are four basic tastes. The four types of taste buds are found on the _____________, and they are ___________, ______________, ______________ and _______________.

24. A ______________ _______________ serves as a blueprint or guide and reminds you to include certain types of foods in your meals.

25. The ____________ _____________ can be arranged into nutritious meals with the aid of a meal pattern.

26. _______________ is often served in midmorning and usually includes both breakfast foods and lunch foods.

27. Processed foods (commercially prepared foods) usually contain more ______________ and ________________ than home prepared foods, and are also more expensive.

28. Contrasts in food _____________ will add more variety to your meal.

29. Cooking ____________ are important to consider when planning a meal.

30. ______________, ________________ and _________________ are three methods of food cookery.

WORKSHEET IV

Answer Key

1. Menu
2. Texture
3. Recommended Dietary (Daily) Allowances
4. Age and sex; nutrient
5. Breakfast
6. Lunch
7. Dinner
8. Time and energy
9. Attractiveness, appetite
10. Shape, size, texture, color, flavor, etc.
11. Host
12. Hostess
13. Preparation
14. Schedule
15. Table setting (place setting)
16. Comfort and convenience
17. Fork(s)
18. Knife and spoon(s)
19. Napkin
20. Longest, immediately (right)
21. Course
22. Fats and sugars
23. Tongue; sweet, salt, sour, bitter
24. Meal pattern
25. Basic 4
26. Brunch
27. Fat (oil) and sugar; salt is also a correct answer
28. Temperature; color, shape, texture are also correct answers
29. Methods
30. Broiling, frying, roasting, braising, stir-frying, baking

GAME IV

OBJECTIVES: At the end of this week, the student should be able to:

1. Plan a menu for one day.
2. Properly set a table, given a meal menu.
3. Write the factors to consider when planning and preparing a meal

INSTRUCTIONS: Read the sentence and decide if it is true or false. If false, restate the sentence to make it true.

****

ANSWERS

D-1	T
D-2	F; do consider
D-3	T
D-4	T
D-5	T
D-6	T
D-7	F; it is important
D-8	F; guests or who invite people
D-9	T
D-10	F; dinner
D-11	F; you should make
D-12	T
D-13	F; placed to right
D-14	T
D-15	T
D-16	F; will encourage
D-17	T
D-18	T
D-19	F; to the left of the forks
D-20	T
D-21	T
D-22	T
D-23	T
D-24	T
D-25	F; do stimulate the appetite
D-26	F; they do account for comfort
D-27	T
D-28	T
D-29	T
D-30	F; for preparing a food dish

GAME IV

The way foods feel to the tongue when eaten is described as texture.

D-1

The Recommended Dietary Allowances are calculated in such a way that they do not consider age and sex.

D-2

Brunch is a combination of foods typically served at breakfast and lunch that is served between the breakfast and lunch hours (midmorning), in place of breakfast and lunch.

D-3

The types and forms of foods you buy will determine the time and energy you need to prepare the meals.

D-4

Attractiveness of a meal can stimulate the appetite by using pleasing combinations of foods.

D-5

A menu is the group of foods served as a meal.

D-6

It is not important to consider the color, texture, shape or size of food when planning a meal.

D-7

The host and hostess are the people you invite to dinner.

D-8

A table setting includes all the silver, china, glassware and linen required for one person.

D-9

The largest meal of the day is called brunch.

D-10

To make a meal in the most efficient way possible, you should not waste your time by making a meal preparation schedule.

D-11

The menu is the first thing needed to begin meal preparation.

D-12

The knife, spoon and soupspoon are all flatware placed to the left of the dinner plate in a table setting.

D-13

Meal planning should start with the Basic 4 food groups.

D-14

Meals should include a variety of textures, since contrasts in crispness, chewiness, smoothness and crunchiness add interest to food.

D-15

Planning meals properly will not encourage nutritious eating habits.

D-16

Your first responsibility in meal planning is to make sure your nutrient requirements are met by the meals for that day.

D-17

It is best to leave "empty calorie" foods out of a menu.

D-18

The napkin is placed under the forks in a table setting.

D-19

Families have different food customs and patterns; therefore, not all families plan to eat the same types of food as you do.

D-20

The salad fork and dinner fork are placed to the left of the dinner plate.

D-21

In planning menus, it is important to have a variety of foods to make the meals appetizing.

D-22

Flatware is a general term which includes all eating implements (utensils) and those used to serve food.

D-23

Everyone should eat at least three meals a day to distribute calories and to keep the body nourished.

D-24

Pleasing combinations of foods do nothing to stimulate your appetite or to make meals more attractive.

D-25

The principles of meal planning do not account for comfort and convenience to people seated at the table.

D-26

The cooking method you choose to prepare a dish affects the outcome of your food.

D-27

When following a recipe, it is important to measure the **ingredients** properly.

D-28

The ingredients listed on a recipe are the food items needed to make the recipe.

D-29

A recipe is directions for entertaining your guests.

D-30